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INSIDE DOPE

by **GEORGE F. TAUBENECK**

Add Sports Stories

Jim Thorpe
Ted Lyons
Lou Boudreau
Babe Herman
Ty Cobb
Brooklyn Dodgers
Cal Hubbard
Name Withheld
Dizzy Dean
Joe Jackson

Add Sports Stories

"Fritz" Crisler, who coached the unbeaten 1947 Michigan football team to a Western Conference Championship and a Rose Bowl victory, is keenly aware of the importance of a strong line to a powerful offense.

After one of his football clubs had won its first three games by lopsided scores, sportswriters were already acclaiming the first-string backfield as All-Americans, all.

Observing their lazily haughty performances in practice the next week, Crisler resolved to humble these brilliant performers. In the fourth game he started his first-string backfield behind a third-team line, and kept that combination together during the entire first half of the game.

The touted "All Americans" gained a total yardage of negative 14 from scrimmage during that ordeal.

Toward the end of the second quarter, Crisler finally sent in a substitute back. He was greeted eagerly in the next huddle.

"What did the Coach say?" he was queried.

"He says you should show your press clippings to those guys on the other side. If they realized that they were facing All-Americans, they might be scared."

P. S.: In the second half, the Crisler team rolled up three touchdowns to win handily—behind the first-string line.

"Chuck" Baer, canny football coach of the University of Detroit's regularly rugged eleven, earned his reputation as a football strategist when he was a high school mentor in South Bend, Indiana.

In those days brother Baer wasn't averse to evoking flagrant emotionalism to key up his champion high school teams. Between halves, in the dressing room, he tried to arouse the "die-for-dear-old-Rutgers" spirit in his teen-age charges.

Baer, who has a grand sense of humor, now reveals that on a Thanksgiving morning when his South Bend high school team was playing a championship game he exhorted his boys thusly:

"This is the first game you fellows have played that My Dear Old Mother hasn't seen. She's on her deathbed. But she's listening to the radio, and she phoned me that she'll feel like living on if you fellows win this game."

In the fourth quarter of this championship debacle, the opposing club was ahead of Baer's South Bend team, 37 to 7. Gloomily, Baer's quarterback prefaced his instructions in the huddle:

"Guess old lady Baer must be dead by now."

Jim Thorpe

The fabulous Jim Thorpe, holder of many all-time track-and-field records, allowed himself to be incarcerated (Concluded on Page 10, Column 1)

Universal Cooler To Turn Out Larger Size Hermetic Unit

MARION, Ohio—Machining facilities are being expanded at the factory of Universal Cooler Division of International Detrola Corp. here for the complete manufacturing of $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{2}$, and $\frac{1}{2}$ -hp. compressors and condensing units, announces Dan Robertson, general manager of Universal Cooler.

A new and larger hermetic compressor which will have all the features of the company's present line of inner-spring mounted single cylinder hermetics, plus the advantages of greater displacement for larger engineering application requirements is also being added to the Universal Cooler line, Robertson revealed. Details of this have not been announced yet.

"During recent months," Robertson also commented, "rumors have been circulating in the industry to the effect that the Universal Cooler of International Detrola Corp. had been sold to another company, or is about to be sold."

"Realizing that idle talk of this kind could raise a question of stability as regards a sound, continuing source of supply, the board of directors of International Detrola Corp. has authorized me to release a statement to the effect that no such sale is contemplated, and that Uni- (Concluded on Back Page, Column 1)

2 Showings Set for New Hotpoint Washer

CHICAGO — A new automatic clothes washer will be shown to dealers by Hotpoint, Inc., at the mid-winter markets here Jan. 3-15 and at the San Francisco market in February, according to Leonard C. Truesdell, vice president of marketing.

The machine is designed for automatic performance at the setting of a dial, yet leaving selection of the quantity and temperature of water to the judgment of the operator.

First formal production of the washer was started here last week in a completely retooled factory formerly used to produce electric ranges. (Concluded on Page 4, Column 3)

IN THIS ISSUE

What are the industry's prospects for 1949? Some refrigerator manufacturers see no drop in prices, continuing strong demand—for a while. Their views appear on page 25.

It's time to start selling again, appliance dealers all over the country are discovering. Here's how the trade in one average American community is going about it. Page 13.

Does it make any difference whether vegetables are frozen at 0° F. or -40° F.? And what temperatures are best for the storage of frozen pork? Answers to these questions can be found on pages 7 and 9.

Have you ever had a prospect grumble about never setting foot in your store again after he lost in a contest you sponsored? One dealer has found a way to smooth his feathers. See page 6.

A Denver service firm decided a "service special" on household refrigerators might keep its whole crew working during dull December. A story on page 12 tells how the idea panned out.

Departments: What's New, page 22... Key to Air Conditioning, page 18... Editorial, page 16... World Trade News, page 21... P. B. Reed, page 27... Patents, page 26.

Big Models Push NEMA Oct. Sales Up 11%

NEW YORK CITY—Outstanding increases in the sale of electric household refrigerators in the 8 to 10-cu. ft. sizes during October pushed total sales by 14 companies reporting to the National Electrical Manufacturers Association 11% above the September mark, figures recently released by Nema have revealed.

Sales of units in all other sizes for the month were substantially below September.

World sales by 11 to 14 member companies for the first 10 months of the year reached 3,438,835 units. All but about 168,000 of these were sold in the United States.

The 8-cu. ft. volume rose from 85,400 in September to 140,736 in October. The 9 to 10-cu. ft. class jumped from 88,117 units in September to 110,731 in October.

For the 10 months, sales of both the 7-cu. ft. and 8-cu. ft. classes passed the 1,000,000 unit mark.

Foreign sales during October paralleled the rise in domestic sales.

1,000 New Locker Plants Seen In '49

OMAHA, Neb.—"We believe prospects for 1949 are brighter than they were at the beginning of 1948... and that 1949 will see a substantial upswing in the rental and use of existing locker facilities," says R. R. Farquhar, executive director of the Frozen Food Locker Institute here.

In a year-end analysis of the locker industry, Farquhar asserted that "with more aggressive selling effort, it should be possible to install at least 1,000 new plants during the coming year."

"Construction of new plants during 1948 was down from wartime levels, (Concluded on Page 4, Column 5)

Safety Meeting To Cover Refrigeration

CHICAGO—A Safety Conference on boilers, unfired pressure vessels (including refrigerating systems), and their safety appurtenances will be held at the Congress hotel here Thursday, Jan. 13.

Sponsored by the Boiler and Refrigeration Department of the city of Chicago in cooperation with the Chicago Boiler Mfrs. Assn. and insurance companies insuring this type of equipment, the conference will include morning, afternoon, and evening sessions in the hotel's Florentine (Concluded on Page 4, Column 5)

G-E Local Warns of Bid for Higher Pay

SCHENECTADY, N. Y.—Higher wages will be sought next month for 15,000 production workers at the home plant of General Electric, according to an announcement by Frank C. Kriss, president of Local 301, CIO United Electrical Workers Union.

Although the demand will be made under a wage-reopening clause in the Union's contract, the amount of increase which would be asked was not disclosed. Such negotiations, however, can be brought up as long as 30 day's advance notice is given.

"The announcement by Charles E. Wilson indicating General Electric Co. is in excellent financial condition (Concluded on Page 4, Column 4)

Manufacturers Expressing Optimism over '49; Mart May See Model Shifts

Price Problems May Be Met by Line Change

CHICAGO—As the Winter Mart opens here Jan. 3 the attention of the department store buyers and independent appliance dealers attending will be focused on two main points—new models, and prices.

There is little chance of any radical changes in price policy being announced. An advance press release from the Merchandise Mart put the problem neatly:

"It is remote that prices on major appliances will be increased, despite rising labor and material costs and on the other hand, it is just as remote that prices will be able to come down. After all, there must be a limit to what anything will sell for and of course, the manufacturer cannot be expected to produce his merchandise and still take a loss."

However, there can be great variation in the prices of refrigerators and ranges, in particular among the appliances, according to the design, number of accessories, etc., and it is true that manufacturers have emphasized their high-priced deluxe models since the end of the War.

Whether this trend will be reversed is one of the questions that may be answered during the Mart. Several manufacturers will show new lines.

The Mart runs from Jan. 3-15 at the Furniture Mart and the Merchandise Mart. The Housewares Show at the Navy Pier runs from Jan. 13-20 (Thursday to Thursday, excluding Sunday).

NARDA Will Tackle Retail Problems

CHICAGO—Members of the National Appliance & Radio Dealers Association will assemble at the Sheraton hotel here Jan. 9-11 to draw up the organization's 1949 program and to thresh out a variety of retailer problems.

Most of the program for this annual meeting will be devoted to 10 panel discussions involving more than 40 participants.

The discussions will cover such subjects as 1949 sales efforts, installations requiring plumbers, radio-television profits, manufacturer-dis- (Concluded on Page 25, Column 4)

3-Model Leonard Line Bows at Winter Marts

DETROIT—Larger-capacity refrigerators with no increase in over-all dimensions distinguish the new 1949 Leonard line of electric refrigerators which will go on display to dealers at the Winter Furniture Marts opening Jan. 3 in Chicago.

The new Leonards include two 8.6-cu. ft. refrigerators, built to supplement the super deluxe full-length-door series, and a completely new two-door refrigerator with the advantages of a super-moist refrigerator and a home freezer combined in a single cabinet.

Walter L. Jeffery, Leonard sales manager, said an important feature of the new 8.6-cu. ft. models is that they take no more floor-space in the kitchen than former "sevens," yet provide a full 1.6 cu. ft. of additional food storage space.

Leonard's two 8.6-cu. ft. refrigerators, models SL and DL, both are (Concluded on Back Page, Column 3)

See Volume Holding Up Despite Recent Slack

DETROIT—Generally optimistic over prospects for 1949, coupled with recognition that sales of refrigerators and other major appliances have been and will become increasingly more difficult, seems to sum up the predictions for the coming year by executives of appliance producing firms who ventured year-end statements.

John F. McDaniel of Hotpoint, chairman of the Nema household refrigerator section, declared that "although competition will be a decisive factor in the year ahead, refrigerator sales in 1949 should approach the all-time peak reached in 1948, with sales totaling approximately 5 million units." He believes that the farm market will continue to gain in importance in 1949.

"In my frank opinion, we have not even begun to saturate the refrigerator market," declared Lee H. D. Baker of Admiral. "The last quarter of 1948 saw certain eastern markets transshipping their refrigerator allotments to the booming 'black market' existing in Texas where distributors working on allotments were unable to meet unexpectedly heavy demands."

J. H. Ashbaugh of Westinghouse declared that the company has made no cutbacks in the production of electrical appliances, and contemplates none, and added that merchandise is still being allocated in almost every line. While admitting that field reports indicate pipelines are beginning to fill up, Ashbaugh said that Westinghouse expected a continuing good demand for appliances.

G-E's President Charles E. Wilson said at a press conference that while sales of some G-E appliances—vacuum cleaners, coffee makers, and garbage disposal units were the particular ones mentioned—were down 50% from the June level, he felt confident that expanded sales efforts will keep the company's business at, or near, the same high level of 1948. He warned that higher labor and material costs might put prices out of the consumer's reach, with resulting cutbacks and unemployment.

RUSHED TO BEAT REG. W

Declared Lee H. D. Baker, vice president in charge of Appliance Division of Admiral Corporation; "Shortly before the consumer demand dropped in certain markets the appliance business had gone through an abnormal month. Before Regulation W went into effect Sept. 20, there was a terrific spurt in the sales of upper-bracket price range appliances, such as refrigerators. So naturally there was a let-down in the demand for some time after the more stringent credit regulations went into effect."

"But then, too, the seasonal slump in refrigerator sales even in pre-war times always hit bottom in November with sales generally running to one-fifth or one-sixth of what they were in May."

"Obsolescence of pre-war models and a current backlog of orders for certain types in most markets forecast an optimistic picture for 1949. Many models of household refrigerators produced by major manufacturers are still on an allocation basis—with no areas excepted and quotas are expected to continue for an extended period. Output has been and will continue to be seriously limited by shortage of steel. However, so far as Admiral is concerned deliveries to dealers will continue to improve. Admiral will be doubling its 1948 production, but still is not (Concluded on Page 25, Column 1)

Manufacturers of Coolers & Filters for over 40 Years

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WATER COOLERS

Stainless steel. Special cafeteria design. High capacity, super storage. Shelves, glass-fillers and or bubblers as required.



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HIGH EFFICIENCY

*Costs no more
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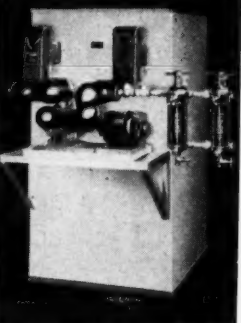
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Eliminate tastes, odors, foreign particles. Promote cooler satisfaction — dealer sales.

INDUSTRIAL
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Temperatures to 34° sustained as set. Special features for bakery, bottling, other processes. Rugged construction.



A Few Choice Areas Open for Factory Representatives

FILTRINE MANUFACTURING CO.
53 LEXINGTON AVE., BROOKLYN 5, N.Y.

Havens Named Asst. Gen.
Sales Manager at Crosley

CINCINNATI—W. A. Bles, vice president of Avco Mfg. Corp. and general sales manager of the Crosley Division, has announced appointment of V. C. Havens as assistant general sales manager.



V. C. Havens

Havens comes to Crosley from Consolidated Vultee Aircraft Corp., where he was assistant to the vice president in charge of sales. For 18 years, he was with the Cadillac, Buick-Olds-Pontiac, and Oldsmobile divisions of General Motors. Prior to joining Convair, Havens was in charge of advertising, sales promotion, and public relations for the Oldsmobile Division. He was also an account executive with the Campbell-Ewald Advertising agency in Detroit.

At Crosley, Havens will be in charge of advertising, sales promotion, and public relations. He will make his headquarters in Cincinnati.

Frank's Appliances Capitalized
At \$50,000 In Watertown, N.Y.

WATERTOWN, N. Y.—Frank's Appliances, Inc. has been incorporated under New York State laws with capital of \$50,000. Incorporators are Frank and Joseph La Martina and Mildred Morrison.

Inspecting New Coolerator Range



Inspecting the new Coolerator DeLuxe electric range are Mr. and Mrs. James Flora, of Scott Sales, Toledo distributor. The range was shown for the first time at the recent Coolerator meeting at the Edgewater Beach hotel in Chicago.

Detroit Heating Firm
Has License Revoked

DETROIT—Advanced Heating & Air Conditioning Co. here lost its license recently after 18 customers testified that mechanics of the firm had torn down their furnaces for minor repairs and were then followed by salesmen who attempted to high pressure them into buying new furnaces.

The firm's license to operate was revoked by the Michigan Corporation and Securities Commission. Action was taken against the company by the local Better Business Bureau.

Some customer-witnesses told the commission that company representatives had warned that they were in danger of death from coal or gas fumes escaping from the "faulty" furnaces. Fire and gas company experts, however, later advised them that there was nothing wrong with their heating units, they added.

Clothes Dryer, Disposal
Sales Up In IEEDA Area

SPOKANE, Wash.—Clothes dryers and garbage disposals were the only major appliances to show a gain in unit sales between September and October of 1948, in the Inland Empire area of eastern Washington and western Idaho, say reports issued by the Washington Water Power Co. Ninety-four dryers were sold during September by Inland Empire dealers while 100 were moved during October. Disposal sales also jumped.

Unit sales statistics for September, October, and for the 10 months are:

Appliance	September	October	10 Mos.
Refrigerators	812	578	9,237
Ranges	921	666	9,013
Water Heaters	559	510	5,660
Home Freezers	177	146	1,356
Clothes Washers	1,045	791	8,649
Clothes Dryers	94	100	455
Ironers	161	118	1,238
Dishwashers	59	57	529
Disposals	36	50	414
Cooling Devices	7	3	418

Liquid Carbonic Quits
Factory In Illinois

MORRISON, Ill.—Liquid Carbonic Corp. is abandoning the plant here in which it has been manufacturing electric refrigerators and ice cream cabinets for the past 17 months.

Byron E. James, general manager, said the plant and machinery will be sold. Employees, numbering about 650 when the factory was opened, have been released gradually within the last two months.

ANYTHING AND EVERYTHING YOU NEED

. . . in Refrigeration, Air Conditioning, Heating Parts and Supplies . . . selected from our complete stocks . . . the same day your order's received . . . by competent experienced men. A can't-be-beat time and money-saving help for you!

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SERVICE PARTS CO.

2511 2611 LAKE STREET MELROSE PARK, ILLINOIS

Dealer Takes Patrons for
A Ride—They Like It

GULFPORT, Miss.—In an effort to increase its December sales, McDaniel's Refrigeration Sales & Service announced:

"For the convenience of our customers, we will be happy to furnish transportation within the city limits of Gulfport to and from our store from Dec. 14 through Dec. 23, where you will have an opportunity of selecting your Christmas needs from our stock. . . ."

Warehousemen Meet at
San Francisco In Feb.

WASHINGTON, D. C.—Refrigerated and merchandise warehousemen from as far away as India will convene at the Fairmont and Mark Hopkins hotels in San Francisco Feb. 7-10 for the 58th annual meeting of the American Warehousemen's Association, the group reported.

Opening-day sessions will be devoted to addresses by leaders of industry and labor before the entire assemblage.

The following three days will be taken up by separate sessions of AWA's two sections, the Merchandise Division and the National Association of Refrigerated Warehouses

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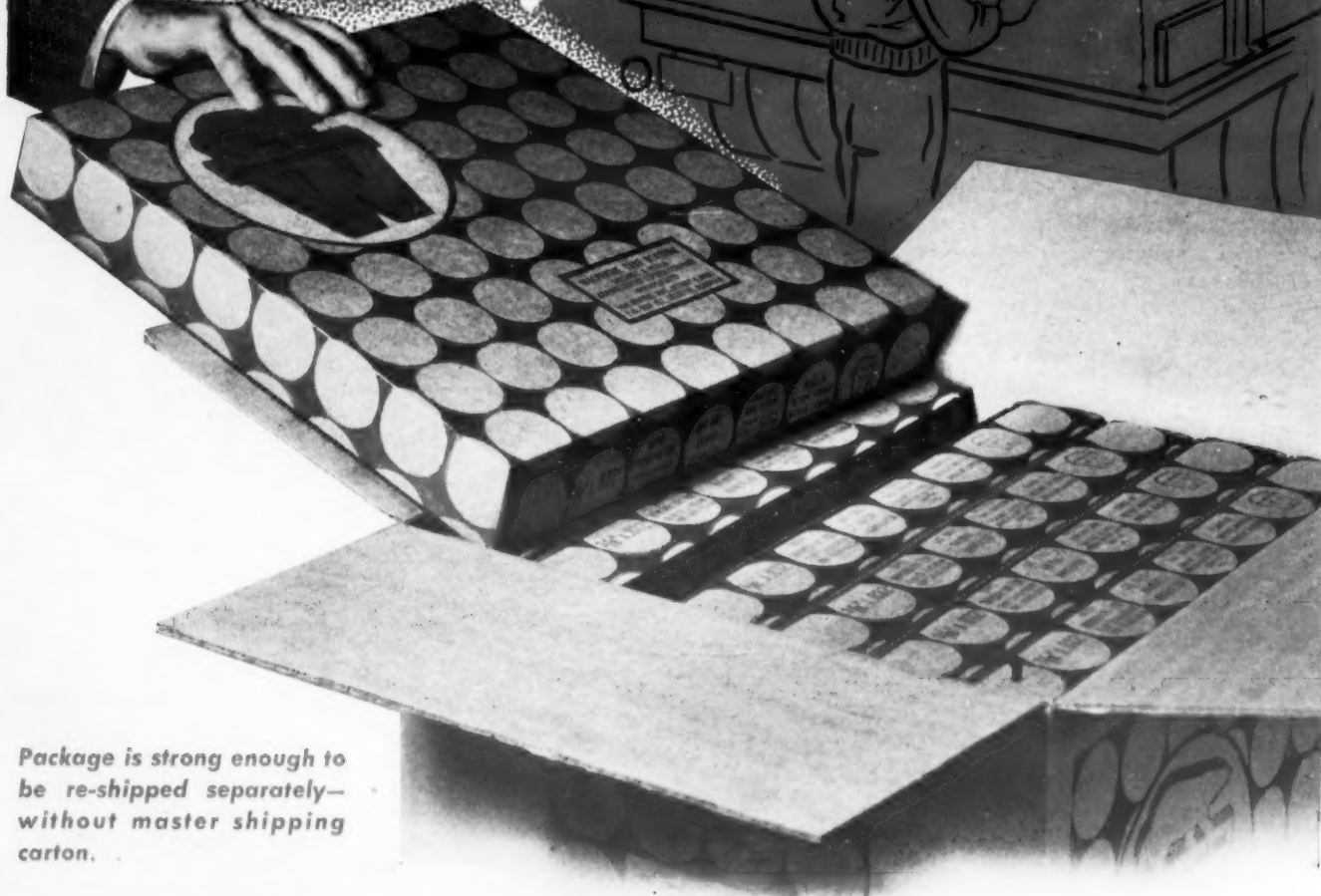
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RESHIPPED

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Package is strong enough to be re-shipped separately—without master shipping carton.

WOLVERINE COPPER REFRIGERATION TUBE

individually packaged in 50-ft. coils

Every 50-foot coil of Wolverine Copper Refrigeration Tube comes to you in a sturdy package carefully protected against all possible harm.

Every coil reaches you in the finest state of manufacturing perfection—with the inside of the tube smooth and dry—hydrostatically tested—both ends are crimped and solder-sealed. It is easy to bend.

These new packages come to you in master shipping cartons from which they can be easily removed for re-shipment to your customers. All the ends are packed facing one way, plainly marked showing contents. Handling is greatly simplified.

There is
a difference
in tubing—
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IT'S A FACT!.. ONLY THE BEST **SURVIVE!**

FOR 1949 IT'S
Deepfreeze
HOME FREEZERS
MORE THAN EVER BEFORE



DE LUXE MODEL C-10

THE YEAR 1948 was a large volume year for the home freezer industry—a 50% increase in sales over 1947. What other industry can show an increase such as this?

What does this big freezer volume mean to you? Just this—

If you had what it takes to sell home freezers, you enjoyed your full share of profits in this great new industry. If not, you are missing the greatest profit-making opportunity in the appliance industry.

DEEPFREEZE home freezer dealers have enjoyed volume sales because they have what it takes to sell.

To sell home freezers in today's market, you, too, need what the DEEPFREEZE home freezer—and only the DEEPFREEZE home freezer—can give you.

THERE'S ONLY **1** ONE...

There are lots of home freezers, but only DEEPFREEZE Division, Motor Products Corporation, can make the DEEPFREEZE home freezer, and only franchised DEEPFREEZE home freezer dealers can use the famous trade name, DEEPFREEZE, registered with the U. S. Patent

Office, Washington, D. C. Entirely new models, with 22 new advanced features... with all the things your customers have been waiting for and all the things you have wanted to sell! Retail prices \$239.95 and up, delivered and installed.

Deepfreeze Dealers are selling home freezers today and selling them in volume and at a profit, because of six basic reasons:

1. THE BEST NAME—DEEPFREEZE is the home freezer easiest to sell because it is the best known.
2. THE BEST PRODUCT—DEEPFREEZE, the pioneer in the home freezer field, is available in brand-new models with the most complete line-up of selling features.
3. THE BEST NATIONAL ADVERTISING—90,000,000 advertising messages—full pages and half pages, full color and black-and-white—proclaim the leadership of DEEPFREEZE home freezers.
4. THE BEST LOCAL ADVERTISING helps for newspaper, billboards, and radio... everything you need to help you sell locally. A liberal cooperative advertising plan.
5. THE BEST SALES TRAINING HELPS FOR DEALERS—complete story of the market and how to sell it in the four volumes of "The DEEPFREEZE Digest of Home Freezing" for your salesman.
6. THE MOST COMPLETE DEALER SALES PROMOTION PROGRAM—window and floor displays, visualizers, decals, broadsides, folders, booklets—everything you need to help you sell.

Dealers who have the DEEPFREEZE franchise really have something. How about you? Are you enjoying your full share of home freezer profits? If not, get the details now—today—on the DEEPFREEZE home freezer proposition for you. Make this your 1949 New Year's resolution—to get your share of the rich home freezer market with DEEPFREEZE home freezers.

DEEPFREEZE DIVISION • MOTOR PRODUCTS CORP.
NORTH CHICAGO, ILLINOIS



De Luxe Model C-10
Holds more than 350 pounds of food.
Price, delivered and installed—\$449.50



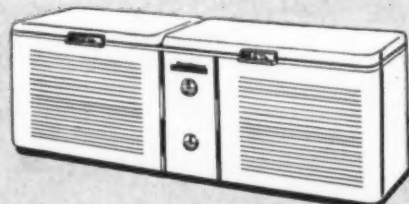
De Luxe Model C-6
Holds more than 210 pounds of food.
Price, delivered and installed—\$269.95



Model B-10
Holds more than 350 pounds of food.
Price, delivered and installed—\$389.50



Model B-6
Holds more than 210 pounds of food.
Price, delivered and installed—\$239.95



De Luxe Model C-18
Holds more than 612 pounds of food.
Price, delivered and installed—\$599.50

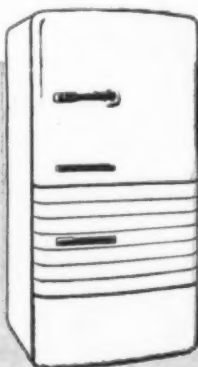
Frostair Now a Product of Deepfreeze Division MOTOR PRODUCTS CORPORATION

Frostair is America's only truly modern refrigerator... cold-sleeve design means no covered dishes, no transfer of odors or taste... extra large ice-making capacity, plus a separate home freezer. Two separate refrigeration systems... One for a full seven-cubic-foot refrigerator. One for a full three-and-one-half cubic foot home freezer. Both in one compact, attractive upright cabinet. This is the truly modern refrigerator—the refrigerator to sell in the 1949 replacement market.



Frostair Duplex Refrigerator. Price, delivered and installed \$588.00.

\$10.00 higher—
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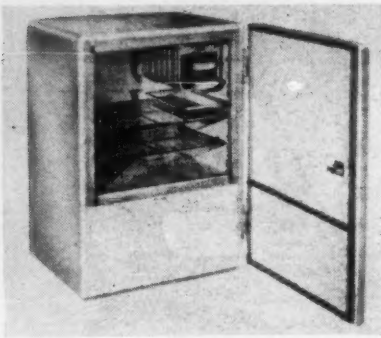
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Address _____ Zone _____
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4-Cu. Ft. Refrigerator



Guardian Table-Top Model Will Retail at \$199.50

NEW YORK CITY—Introduction of a new 4-cu. ft., table-top refrigerator with a full-length, hand-rolled door has been announced by Guardian Refrigerator Mfg. Co. here.

Retailing at \$199.50, the refrigerator is available for immediate delivery in white. Later production will include several other color choices, according to the manufacturing company.

All-steel construction, a porcelain tank, and Fiberglas insulation are listed as important features. Others reportedly include heat and acid resistant, rust-proof finish, a hermetically-sealed Tecumseh condensing unit, a large meat storage and defrosting tray, and a full-range rheostat temperature control.

The "Guardian" carries a five-year warranty.

The company is located at 850 St. Ann's Ave., New York City.

Philco Shows New Lines To Distributors In Jan.

PHILADELPHIA—To introduce its new 1949 refrigerators, home freezers, and air conditioners, Philco Corp. will be host to about 1,500 representatives of the company's wholesale distributors at sales conventions in Palm Beach, Fla., Jan. 5 through 9, and Santa Barbara, Calif., Jan. 13 and 14, is was announced by James H. Carmine, vice president—distribution.

The eastern and midwestern distributors and members of their organizations will attend the Palm Beach meeting, and the Santa Barbara convention will be held for the west and the Pacific Coast distributors.

Philco's International Division will hold a separate convention in Palm Beach Jan. 8, with more than 50 key distributors throughout the world in attendance.

The combined conventions will be the largest ever held by Philco, Carmine declared.

CORRECTION

A story published on page 17 of the Dec. 20 issue of Air Conditioning & Refrigeration News referred to a compact water cooler now being made by Frigidaire which delivers "up to 30 gals. of water per hour."

This should have read "20 gals. per hour."

Hotpoint's Automatic Washer



Topside view of the new Hotpoint automatic washer, showing the patented agitator which is claimed to assure efficient performance with small amount of water in tub.

Hotpoint Ready To Show New Washer--

(Concluded from Page 1, Column 2)

The appliance is being introduced, Hotpoint said, following eight years of engineering research conducted simultaneously with the development of the Company's pushbutton electric range and automatic dishwasher.

"Although priced in the middle bracket, the new machine was designed to combine features which

most women want in an automatic washer, as shown in consumer surveys," Truesdell stated.

"Most women list extravagant use of hot water and soap and the inability to vary the amount of water as principal objections to automatic washers."

The machine, he pointed out, "was designed to overcome these obstacles through the use of a patented agitator which assures efficient performance with a small amount of water in the tub."

Hotpoint supplied this other information about the new automatic washer:

"Sixteen gallons is the maximum hot water requirement for a full tub of eight pounds of clothes, and a complete washing can be done with half that amount of hot water. For smaller washers, as little as five gallons can be used.

"At the setting of the dial, the washer will operate automatically through an entire cycle, or any phase of the operation may be interrupted, skipped, or repeated.

"Time required for washing and spin drying a full load of clothes is approximately 30 minutes. The rinsing cycle includes one warm spray, one cold spray, and a deep overflow which floats residual soap and scum into the drain from the water surface. Bar, powdered, or liquid soap can be used according to convenience or preference.

"The machine is equipped with automobile-type fluid drive which automatically adjusts the spin drying speed to assure efficient water removal from bulky items such as bath mats and throw rugs, without noise or excessive vibration.

"The machine is installed without bolting to the floor, and has levelers under each corner. The washer is 25 inches square and is designed to match the company's other counter-height kitchen and home laundry appliances.

Union Pay Demands--

(Concluded from Page 1, Column 3) comes as good news to us in Local 301," stated Kriss. "It seems that General Electric workers are in a position for wage increases at this time, and we feel the company is in a position to meet obligations to its employees."

Recently Wilson had told a congressional committee that 1948 profits of 7.4% on the sales dollar were lower than they should be to provide an adequate protective cushion. Increased wages could only mean increased prices, he said.

Locker Building--

(Concluded from Page 1, Column 3) although best estimates indicate that between 1,000 and 1,100 plants were built during the year. This volume has been exceeded only three times in the industry's history," he pointed out.

"Careful surveys indicate that some 12% of the 6,100,000 lockers in the United States were unrented last Oct. 1. While this was cause for some concern, we think it should be pointed out that very few businesses or industries ever, except in wartime perhaps, operate at 100% capacity."

That there were some plants built during the war or just after that were too large for their communities was admitted by Farquhar, but, he said, "except in these relatively few instances, we believe that the available space in agricultural areas is presently filled to approximately 95% of capacity. In view of the sharp drop in volume of business in a great many fields, it seems to us that this condition reflects very favorably on the industry."

Renewed interest in locker rentals has come about in the midwest "since meat prices have found a lower and more reasonable level. We find in our own operations," Farquhar declared, "that people who did not feel justified in filling their lockers with extremely high-priced meat are once more beginning to use lockers at the new lower prices of the products which are put into them."

As for his prediction that 1,000 new plants will go up in 1949, Farquhar said it was "likely that these plants may be somewhat smaller in size than those installed during the postwar years because of the difficulty of financing large, exclusive locker plant ventures, and because of a more conservative apportionment and a more careful analysis of possibilities by those who will install these plants."

Safety Meeting--

(Concluded from Page 1, Column 3) room with luncheon and dinner.

Registration is scheduled to begin at 9 a.m.

Announced purposes of the conference are:

"To provide greater public safety by the elimination of explosions and accidents in the operation of boilers, pressure vessels, and refrigerating systems in factories, stores, etc."

"To provide uniform enforcement of city ordinances, ASME codes, national board of boiler inspectors' rules, and insurance regulations."

"To provide the people of Chicago with the best, latest, and safest methods of repairing equipment, and to instruct the contractors in the most advanced methods."

"To provide the people of Chicago with the most scientific and latest safety devices."

"To educate the safety engineers engaged in this branch of public safety in the latest and best methods developed."

Wm. J. McAllister is chairman of the committee on arrangements. Reservations for the conference can be made through him, the office of the Chicago Boiler Mfrs. Assn., or the City Boiler Inspection office in Chicago.

Superior
VALVES, FITTINGS
and ACCESSORIES
For All
Refrigeration and
Air Conditioning Systems

Superior Valve and Fittings Co.
PITTSBURGH 26, PENNA.



ACME INDUSTRIES, INC.
Jackson, Michigan
Representatives in all principal cities

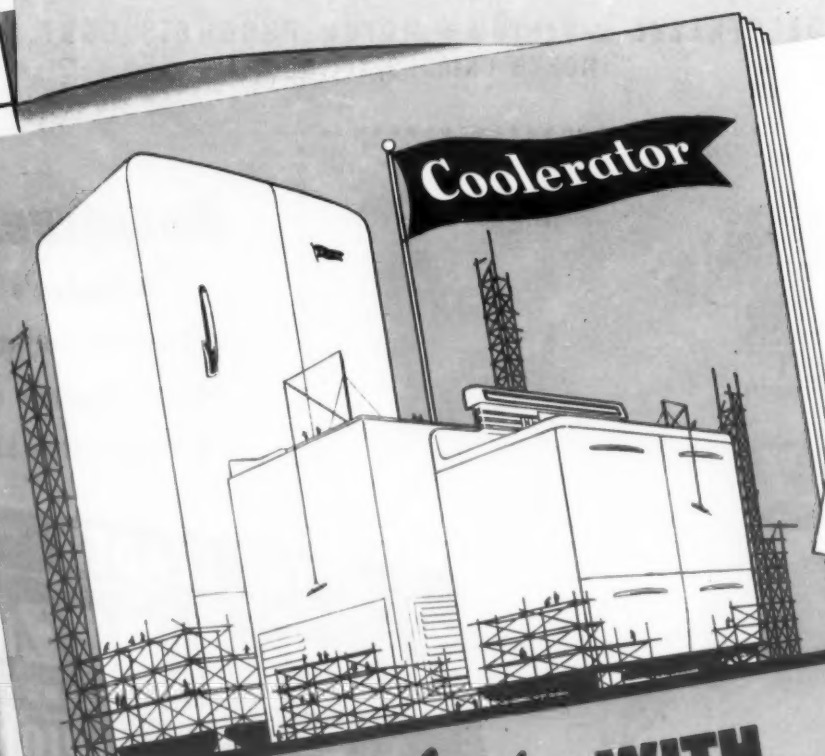


Coolerator OPENS THE DOOR TO Bigger Profits!

Coolerator's profit making opportunities for you in '49 are soundly based on a dealer-minded program which offers unusual advantages. It incorporates every incentive to build soundly for the future—with the freedom of action essential to an independent retail operation.

Call your Coolerator distributor for complete details or write us direct for your copy of the Coolerator Franchise Book.

THE COOLERATOR COMPANY • DULUTH 1, MINNESOTA



**GROW faster WITH
THE LINE THAT'S
GROWING fastest**

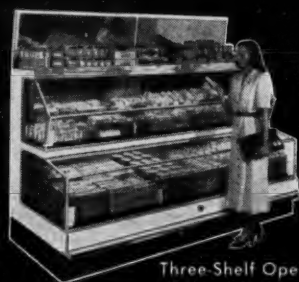
Visit our display,
Suite 11-107 at
The Merchandise Mart
during the January Show.



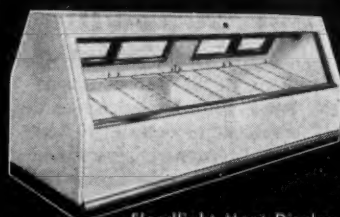
THE BANNER LINE IS THE PROFIT LINE FOR '49



Continuous, Self-Service, Open Meat and Dairy Cases (Double-Duty)



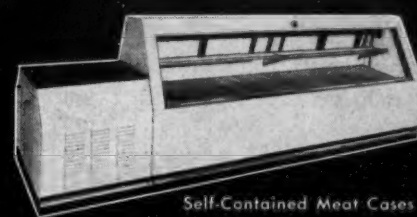
Three-Shelf Open Meat and Dairy Cases (Continuous, Self-Service)



Floodlight Meat Display Cases



Dairy and Delicatessen Cases



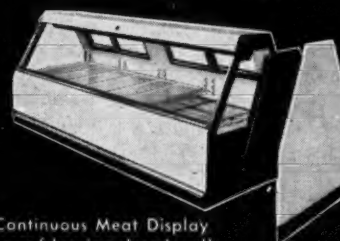
Self-Contained Meat Cases



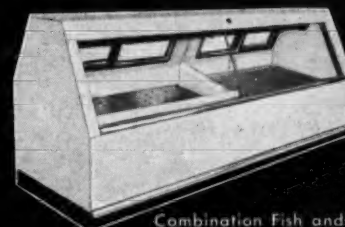
Continuous, Self-Service, Open Meat and Dairy Cases (Top Display)



Meat Display Cases



Continuous Meat Display Cases (showing closed end)



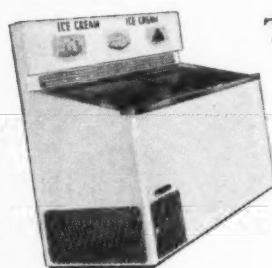
Combination Fish and Poultry Cases

TYLER

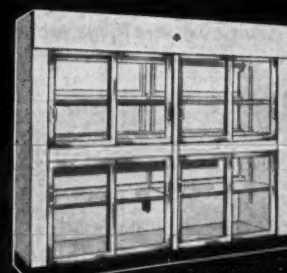
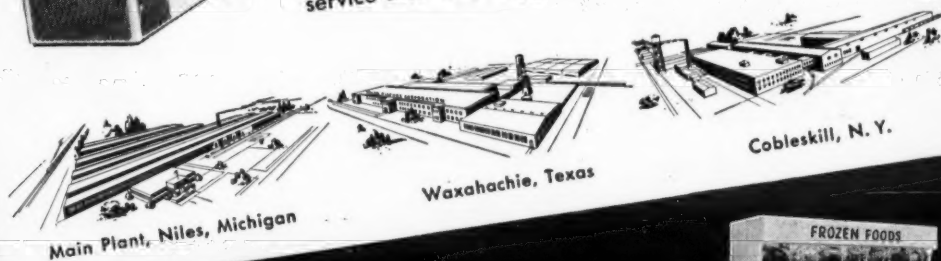
FOR FOOD REFRIGERATION

The big Tyler line of WELDED-STEEL refrigerators and display cases continues to grow and improve. Tyler Agents are in a position to serve many types of stores, restaurants, hotels and other institutions.

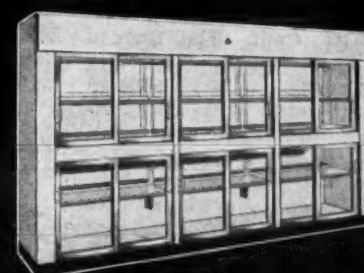
TYLER FIXTURE CORPORATION
Niles, Michigan



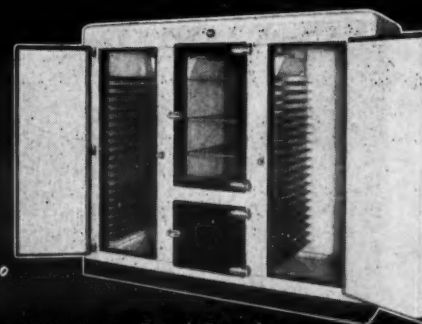
Of interest to Ice Cream Manufacturers, Frozen Food Packers—Drug Stores—Fountains—Groceries—Delicatessens—New Tyler LOW TEMPERATURE SALES CASE, complete with compressor—for the display and self-service sale of packaged ice cream and frozen foods.



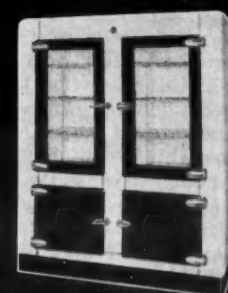
Wall Dairy Refrigerators (8' length)



Wall Dairy Refrigerators (12' length)



Dough Retarders



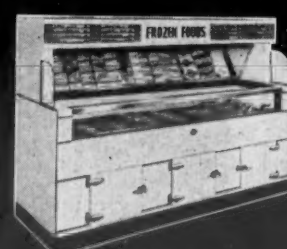
Reach-In Refrigerators (R-43)



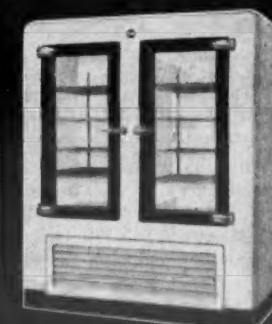
Frozen Foods Display Cases (Open, Self-Service, 8' length)



Reach-In Refrigerators (R-75)



Frozen Foods Display Cases (Open, Self-Service, Low Style)



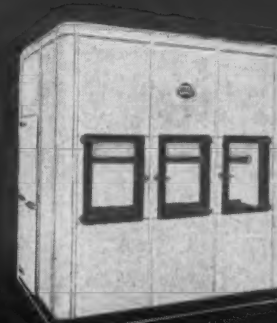
Reach-In Refrigerators (RS-34)



Frozen Foods Display Cases (Open, Self-Service, 5' length)



Produce Refrigerators (Including Dry Sections)



Sectional Walk-In Coolers (Metal-Clad—Display)



Reach-In Refrigerators (R-21)



Sectional Walk-In Coolers (Metal-Clad—Plain Storage)



Dry-Kold Beverage Coolers (Bar Top)

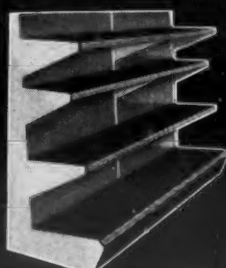


Dry-Kold Beverage Coolers (Underbar Type)

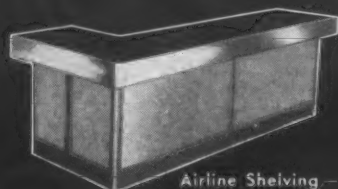
TYPICAL UNITS IN THE TYLER LINE



Airline Shelving—Center Island Unit



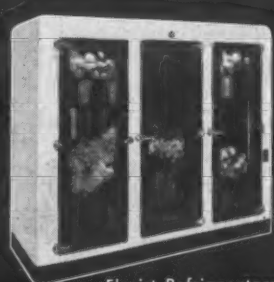
Airline Shelving—Wall Unit



Airline Shelving—(Check-Out Counter)



Florist Refrigerators (Sectional Cooler)



Florist Refrigerators (Reach-In)



Florist Refrigerators (Wall Type)

HUNDREDS OF THOUSANDS OF SATISFIED USERS KNOW THAT TYLER EQUIPMENT MEETS ALL REQUIREMENTS OF: VISIBILITY AND DISPLAY • PROPER PRESERVATION • SANITATION • EASE OF SERVICING • ECONOMY OF OPERATION • QUALITY CONSTRUCTION AT LOW COST!

Refrigerators, Freezers Top List

	Estimated Retail Sales for October	Estimated Retail Sales for September	Sales October Last Year	Sales for October 1941
Refrigerators	1,450	1,625	1,100	650
Home and farm freezers	375	450	250	*
Electric ranges	240	300	350	40
Gas ranges	1,075	1,300	950	*
Electric water heaters	285	300	150	35
Automatic washers	485	565	425	*
Non-automatic washers	925	1,250	785	400†
Portable washers	120	125	250	*
Automatic ironers, consoles	260	300	*	*
Automatic ironers, portables	85	150	250†	70†
Dishwashers	80	125	65	*
Clothes dryers	30	35	*	*
Garbage disposal units	460	450	160	*
Vacuum cleaners	1,275	1,450	1,250	375

*No record. †All.

October Appliance Sales Hold Own In San Diego

SAN DIEGO, Calif.—The Bureau of Radio & Electrical Appliances of San Diego County (Calif.) reported that total unit retail sales of appliances in the area in October were about equal to the volume for the same month last year.

"Appliance sales everywhere have been off during the past couple of months, but not anything like the extent, here at least, that many feared would be the case," said J. Clark Chamberlain, secretary-manager of the bureau.

"November business, while definitely down, was still much better than 'advertised.' First half of November was dull, but the last two weeks showed definite improvement. We may not equal the December 1947 volume this year, but indications still point to a very sizeable Christmas appliance business.

The table above gives excerpts from the bureau's report of retail sales in San Diego county for October, as compiled from confidential figures.

Willis Named Vice President Of Minneapolis Ad Agency

MINNEAPOLIS — H. A. (Herb) Willis, who has helped develop cooperative advertising programs for appliance dealers here during the past 12 years, has been named vice president of a newly incorporated Nelson-Willis Advertising Agency here.

Willis helped to promote the first cooperative advertising campaigns on electric cooking and water heating for the Minneapolis Electric Appliance Dealers Association. These campaigns, sponsored with cooperation of Northern States Power Co., are said to have played a major role in developing present day acceptance of appliances in the Minneapolis area.

Richardson-Wayland Names 2

ROANOKE, Va.—R. V. Dodge, Jr., and C. W. Camper have been appointed manager and assistant manager, respectively, of the air conditioning and heating department of Richardson-Wayland Electrical Corp.

Dealer's Humorous Mailing Piece Intended To Retain Goodwill of Unlucky Contestants

DENVER—One of the worst drawbacks to prize-drawing contests staged by appliance retailers—the fact that hopeful entrants who did not win may harbor some ill-will against the firm—has been dispelled by a mailing piece developed by Bragdon's, Inc., appliance dealer at 6740 E. Colfax here.

R. Bragdon, head of the firm, has operated a string of appliance stores in Colorado for many years, and is a firm believer in the value of "give-away contests" to draw traffic.

Upon opening his complete new appliance dealership on East Colfax during August, he staged an unusually dramatic "door prize drawing" which attracted more than 15,000 people. They deposited their names to win a Frigidaire refrigerator, General Electric sweeper, Zenith radio, G-E mixer, G-E iron, and a score of other worthwhile prizes.

The drawing was staged on Satur-

day Aug. 28, and winners' names announced. Immediately afterwards, all of the Bragdon salespeople set to work addressing a unique folder which went out as "consolation" to all of the entrants who did not win, and which was designed to hold their friendship.

Listed on the outside of the folder were the names of the first four prize winners, in white boxes on a green background. On the opposite page, a banner headline read "We're sorry" with the cartoon of a man with a tear rolling down his cheek, lending humor to the greeting.

Copy inside read "We're sorry that you didn't win one of the grand prizes we awarded in conjunction with our grand opening—but we thought you'd like to know who the lucky winners are . . . and the winning numbers. We want to thank each of you for the wonderful response we received during our open-

ing, and to partially express our appreciation, we offer the following:

Below were listed the services offered by Bragdon, Inc., plus the appliance lines carried, and an offer to the contest entrant to come into the store, select any new radio, which would be installed in the entrant's home for a free demonstration.

"Naturally, every contest entrant would rather win the prize than to merely receive a direct-mail piece," Bragdon smiled, "but by mailing out several thousand of these folders, we believe we are holding the goodwill of all entrants and are keeping them familiar with our store."

Newark Appliance Distributor Moves to New, Larger Quarters

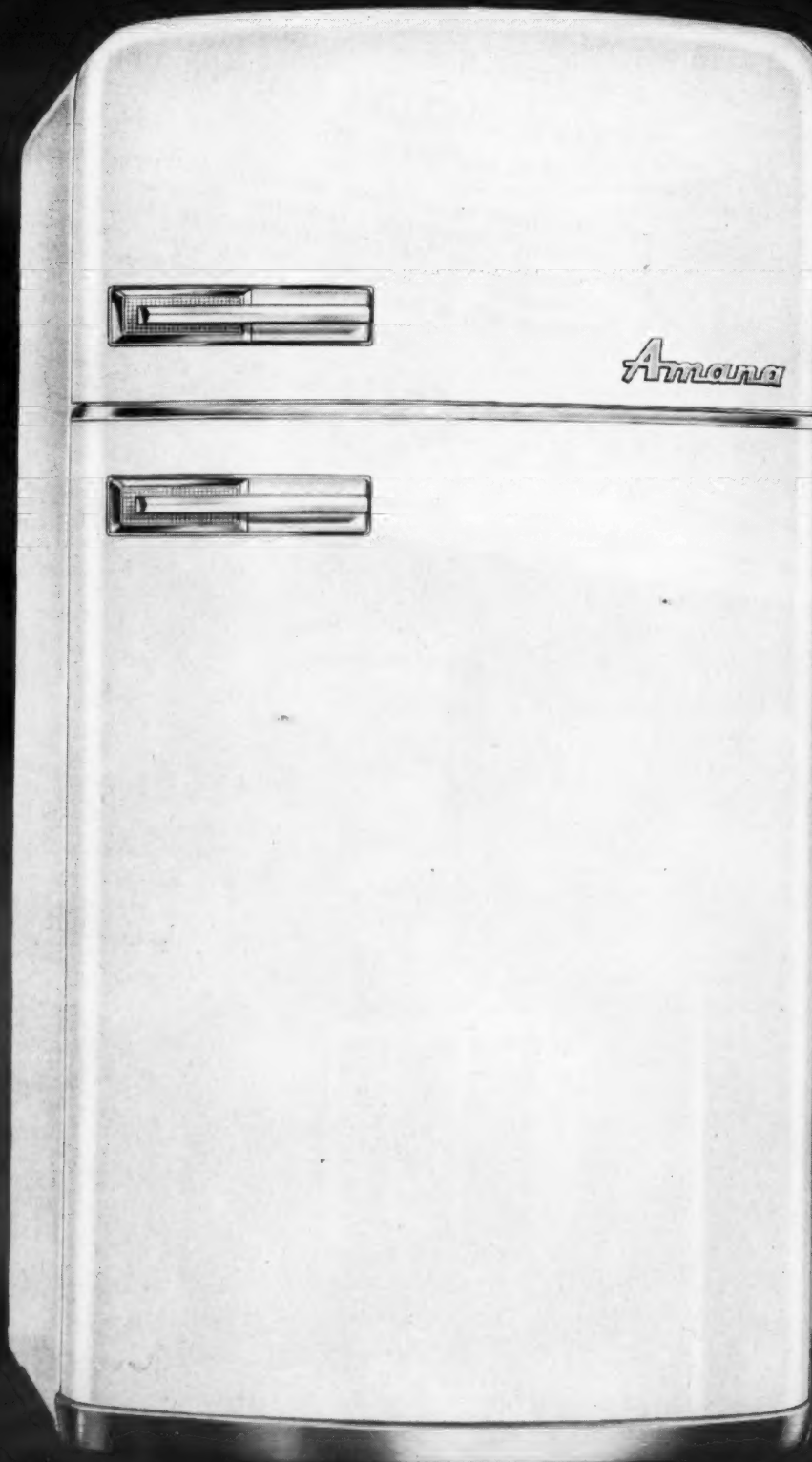
NEWARK, N. J.—The Eagle Sales Co., appliance distributor, will move to its new quarters at 310 Sherman Ave., corner Concord St., here, on or about Jan. 1, Morris H. Freedman, vice president announced.

The move, first step in Eagle's expansion program, will supply the company with 43,000 sq. ft.

Bendix Declares Dividend

SOUTH BEND, Ind.—Directors of Bendix Home Appliances, Inc., have declared a dividend of 37½ cents a share on the common stock, payable Jan. 11, 1949, to stock of record Dec. 28, 1948.

NEW! AMANA REFRIGERATOR



TWO TEMPERATURES
One for Freezer
One for Refrigerator

TWO DOORS
One for Freezer
One for Refrigerator

NEVER NEEDS
DEFROSTING

REFRIGERATOR
COMPARTMENT
over
7 cu. ft. capacity

FREEZER
COMPARTMENT
Approximately
2 cu. ft. capacity

STYLED FOR
THE FUTURE
Smart, trim lines

1852

WHAT'S BEHIND THE AMANA LINE!

•Since 1852 Amana craftsmen have been producers of quality goods for the American household. Products that bear the Amana name carry a tradition of quality and integrity of prideful workmanship.

REFRIGERATION DIVISION, AMANA SOCIETY, AMANA, IOWA

In the Heart OF DETROIT

FACING GRAND CIRCUS PARK

The Tuller, a modern hotel for those who want the best! Convenient to Offices, Theaters, and Shops. Friendly, courteous service and real Hotel Comfort. The Tuller Coffee Shop or Cafeteria for your Dining Pleasure at modest prices. It pays to stay at Hotel Tuller.

VISIT OUR COCKTAIL LOUNGE ONE OF DETROIT'S FINEST

800 ROOMS \$2.75 WITH BATH FROM

HOTEL TULLER

RICHARD C. HODGES, Mgr.



R. W. Burch To Head IEEDA; Claude Edgren Is Named Vice Pres.

SPOKANE, Wash.—R. W. Burch of Coeur d'Alene, Ida. was elected president of the Inland Empire Electrical Dealers Association at a recent meeting of its board of directors here.

He succeeds John F. Booth of Brown-Johnston Co., who served as president of the association since it was formed in 1946 and who will continue to serve on its executive committee.

Claude Edgren, appliance dealer of Colfax, Wash., was elected vice president, succeeding Charles Fanning of Oakesdale, Wash.

W. J. Maghan, of the General Appliance Co., was elected treasurer, succeeding Burch. F. A. Tool of the Washington Water Power Co. was re-elected secretary, and Robert L. Wilkinson was re-appointed executive secretary.

The association's board of govern-

ors is composed of representatives from each of the organization's six chapters in eastern Washington and northern Idaho.

Its members not also serving as officers include Claude Whiteley, and Gordon F. DeFoe, Coeur d'Alene; Fred W. Denson, Davenport, Wash.; William Featherstone, and Vern J. Nelson, Wallace, Ida.; Dewey Scheibe, John Nanninga, and J. J. Fox, Lewiston, Ida.; S. C. Haddock, Moscow, Ida.; W. E. Snyder, Wash-tucna, Wash.; Ralph Wickberg, Kellogg, Ida.; Fred J. Williams, Davenport, and L. A. Winn, Pullman.

Library of Congress Offers Frozen Meal Research Book

WASHINGTON, D. C.—A summary report on the progress of research on pre-cooked frozen meals is now available from the Library of Congress here. Labeled PB 93531 and called "Pre-Cooked Frozen Foods," the book, it is said, can be obtained in photostatic copy for \$2.50 each and in microfilm at \$1.75.

Slow Freezing Makes Little Difference In Taste, Vitamin Content of Vegetables, Tests Indicate

WASHINGTON, D. C.—Vegetables frozen at 0° F. in a home freezer should be as palatable and as high in vitamin content as those commercially frozen at temperatures of -40°, judging from one of the technical papers presented at the recent annual meeting of the American Society of Refrigerating Engineers here.

"Spinach, corn, and lima beans show few differences in vitamin content or palatability whether frozen very slowly, very rapidly, or at intermediate rates," declared Frank A. Lee, reporting on experiments he and Willis A. Gortner conducted at the New York State Agricultural Experiment Station.

"Photomicrographs of cross sections show the formation of large veins of ice in the slowly frozen products, but when thawed no significant injury is evident," the speaker said.

With asparagus some differences in texture were detected, but the vitamin content of asparagus and the other vegetables "was unaffected by the rate of freezing both before and after cooking."

The six judges who sampled the frozen vegetables could detect no difference in the taste of lima beans, corn, and spinach, with the exception that the spinach frozen in liquid air was considered "very tender" by some judges, "mushy" by others, according to Lee.

There were some differences noted in asparagus, he said. That frozen in liquid air was much better than the other samples, while that frozen at (1) commercial temperatures, (2) at 0° F. in still air, and (3) at 0° in an insulated box, were rated progressively poorer in that order by the judges.

"However," Lee emphasized, "the difference between the samples

frozen in the air blast at subzero temperatures and those frozen in still air at 0° F. not insulated were not very great."

The speaker also went on to point out that "we do not wish to create the impression that the use of the slowest freezing conditions described in this paper are recommended. Under some conditions, difficulties of a bacteriological nature might be encountered. Also, rate of freezing should not be confused with over-all time of handling."

LIQUID AIR USED IN TESTS

In the tests at the experiment station, freezing at 0° F. was achieved in a Steinhilber farm freezer, while an Aminco Subzero cabinet equipped with an 18-in. fan supplying a 650-f.p.m. air blast at -40° F. simulated commercial freezing methods.

Immersion in liquid air at -301° to -317° F. was also employed for loose, blanched vegetables.

Incidentally, Lee said that "since liquid air is not practical as a refrigerant for several reasons, it may well be that the use of liquid nitrous oxide, as developed in Germany during World War II, would have possibilities."

Commenting on the paper, J. M. Lemon of the U. S. Department of Agriculture, said, "Six months' storage time is not long enough for tests of this type. It does show, however, that there may be a happy medium between extremely low temperatures and 0° F. It probably also shows that the same freezing temperature is not necessarily the best for all products."

POOR STORAGE CAUSES TROUBLE

In this connection Lee replied that "while longer storage tests might be of some value, some samples tested after two years showed no significant difference" with the conclusions reached after six months.

"Poor storage can cause more trouble than slow freezing," declared G. A. Fitzgerald, director of the Frozen Food Foundation, in a written discussion of Lee's paper.

"Slow freezing at home can produce products of equal palatability and flavor to commercial products," he added, "but it is not safe to generalize on palatability tests alone. Commercial freezing shows less weight loss than slow freezing."

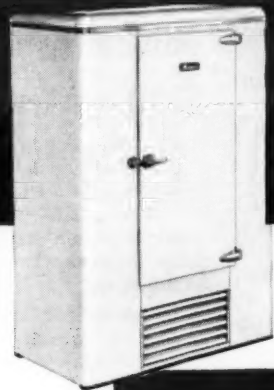
"Losses of vitamin C in spinach were shown excessively high in this paper as compared to other tests. Older experiments show that the blanching-cooling process with spinach can cause greater vitamin loss than the freezing method," Fitzgerald said.

Dr. J. G. Woodroof added the observation that "the rate of freezing has been kicked around for 18 years now, but it is still sufficiently important to give it our continued interest."

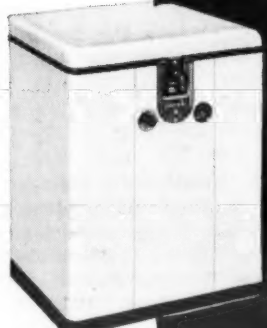
offers a Golden Profit Opportunity to Amana Dealers

HERE'S THE REFRIGERATOR

WITH A MARKET ALL ITS OWN!



MODEL 18
18 cu. ft.
capacity



MODEL 50
5 cu. ft.
capacity



MODEL 25S
25 cu. ft.
capacity



MODEL 110
10 cu. ft.
capacity

*Hotels, Restaurants, Clubs, Estates are calling for Amana's big 134 cu. ft. capacity "Walk-In" Freezer-Cooler—and Amana Freezer Model 30RS with over 1000 pounds capacity of frozen foods.

Refrigeration Division
AMANA SOCIETY
AMANA, IOWA
Amana

Pioneer specialists in low temperature refrigeration with a century-old tradition of fine American craftsmanship.

● You must see Amana's new refrigerator-freezer to understand why and how it can brighten your profit picture in 1949!

Thousands of homemakers are looking for the finest—something besides "just another refrigerator." This new Amana Refrigerator-freezer is for them!

Profits! Your full mark-ups! To get the cream in 1949—sell the cream—the new Amana Refrigerator-freezer—and the complete line of Amana Freezers.

Let us send you full details of Amana's profit-making proposition for dealers. Send coupon!

DISTRIBUTORS

YOUR TERRITORY MAY BE AVAILABLE!

Wire, Phone, Write, or See Amana representatives at National Home Furnishings Market, Chicago, January 3 to 15—Space 536B, Furniture Mart.

DEALERS! MAIL COUPON TODAY

Refrigeration Division
AMANA SOCIETY, Amana, Iowa

Furnish us with complete profit making proposition for Amana Refrigerators and Amana Freezers.

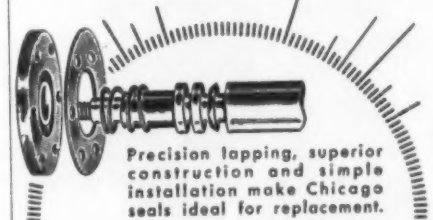
Store Name.....

Address.....

City.....Zone.....State.....

Dealer's Name.....

PLAYSAFE
USE
CHICAGO SEALS
and
VALVE PLATES



Only Chicago valve plates have replaceable seats.



CHICAGO SEAL CO.
332 S. HOYNE AVE. CHICAGO 12, ILL.

see your **"DETROIT"**

WHOLESALE

for

Expansion Valves
Solenoid Valves
Controls

"DETROIT"

2810

DETROIT LUBRICATOR COMPANY General Offices: 5900 TRUMBULL AVENUE
DETROIT 8, MICHIGAN

Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION
Canadian Representatives: RAILWAY AND ENGINEERING SPECIALTIES LIMITED, MONTREAL, TORONTO, WINNIPEG

"Detroit" Heating and Refrigeration Controls • Engine Safety Controls • Float Valves and Oil Burner Accessories
"Detroit" Expansion Valves and Refrigeration Accessories • Stationary and Locomotive Lubricators

EXPORT DEPARTMENT—Box 218, Ridgefield, New Jersey

'Putting Customers Through School' Gets Results In Selling Complete Kitchens

DANVILLE, Ill.—The best means of profitably selling a large volume of complete model kitchen installations is by "putting the customer through school" before any part of the kitchen is delivered, according to J. W. Garrett, manager of the Block and Kuhl Appliance Store here.

The Block and Kuhl Store has hung up a surprising record for complete kitchen installations in a small city, with almost as many in the farm homes surrounding. The majority of successive sales, according to Garrett, come directly from users, who enthusiastically boost their all-electric kitchens to their friends.

Unlike many other dealers who have experimented with model kitchen selling, Block and Kuhl "handles the entire job" promising installation on a certain day, and with ample personnel on hand to take care of plumbing, wiring, painting, woodwork, carpentry, etc.

The store's salesmen have all been trained at estimating the cost for remodeling a farm or small-town kitchen into a modern, work-saving room.

Each can sketch out how the installation will look when finished, and, as a final "clincher," can usually take the prospect in his automobile around to see a Block and Kuhl installation in a home nearby.

The most important selling step, both from a standpoint of building good will, and desire for the new kitchen, is the "operational school"

which Block and Kuhl runs in the store's model kitchen.

At the rear of the store is a complete all-electric kitchen and a utility room, side by side, which appear exactly as they will look in any home.

In the kitchen are a refrigerator, electric sink with garbage disposal machine, dishwasher, electric range, waffle iron, toaster, fan, kitchen radio, coffee brewer, and electric clock. In the utility room are an automatic washing machine, dryer, water heater, and ironer.

Each of these appliances is hooked up and can be put into operation at once, with plenty of hot and cold water service.

Instead of letting the prospect stand by while the salesman operates the appliances, Block and Kuhl insist that the prospects carry out these jobs themselves.

CUSTOMERS TEACH THEMSELVES

In the semi-private atmosphere of the model kitchen, customers "teach themselves" under the guidance of a salesman how to use every piece of equipment, actually cooking, baking, and freezing, from a stock of food supplies maintained by the store.

The prospect is given a special bag in which to bring her own laundry, putting it through the washer and dryer and experimenting with the ironer. Similarly, each customer may use the range, refrigerator, and small appliances, until she has learned exactly what each will do.

"We actually sell twice as many model kitchens in this way" Garrett said, "simply because the idea does away with complaints or dissatisfaction from there on."

"If the customer lets us install a model kitchen without knowing the whole story, the chances are that she will make mistakes, turn out improper meals or laundry and blame the store."

SALESMAN LOOKS FOR MISTAKES

"To make certain that the prospect understands the operation of every appliance, we will spend 12 hours if necessary, to thoroughly 'check her out'."

During the "school period" the salesman on duty watches for mistakes which may cause complaints later on. Included are such things as putting too much food in the freezer compartment of a refrigerator, peeping into the oven of a range during a baking process, or overloading a dishwasher or garbage disposal.

"A lot of women have different ideas about the use of their appliances than the manufacturer," Garrett said, "and the only way we can uncover these in advance is to spend enough time with the prospect that we can recognize such dangers, and correct them in advance."

After the customer is thoroughly satisfied with the use of every appliance, she is taken "on tour" of Block and Kuhl's large service department, which maintains all appliances in the model kitchen. Here she receives additional instruction on preventive maintenance.

As a result, the Danville store's kitchen installations are all enthusiastic boosters for future sales—and the store handles a steady turnover of \$900 to \$2,500 kitchen jobs.

Tri-State Distributes Bendix In Parts of Illinois, Iowa

SOUTH BEND, Ind.—Lynn Eaton, director of districts for Bendix Home Appliances, Inc., has announced the appointment of Tri-State Supply, Inc., Rock Island, Ill., as distributor for Rock Island county and 19 counties in Iowa. Max Laity is president of the distributorship.

Two-Thirds of Nashville Homes Cook Electrically

NASHVILLE, Tenn.—A total of 40,206 of Nashville's 69,692 residential electric customers cook electrically, the Nashville Electric Service reported in a recent newspaper advertisement.

The utility said that this large total—nearly two-thirds of all wired homes are equipped with electric ranges—is "because Nashville's low electric rates are far below the national average—in fact among the cheapest in the country."

The advertisement urged readers to "join the bandwagon swing to modern electric cooking by ordering your range right now. See your electrical appliance dealer. He will arrange easy payment terms, if you wish."

Merchandising Counselor Service Opened by Brown

PHILADELPHIA — Harry Boyd Brown, who was national merchandising manager of Philco Corp. for 18 years until he resigned about two years ago, has announced that he is opening offices at 18 West Cheltenham Ave. here as a merchandising counselor.

Among other things, Brown organized portable air conditioner sales for Philco when the company entered the field a few years ago. He has been a frequent speaker at appliance meetings.

Before joining Philco, he directed sales promotional campaigns for eastern utility groups and for Eureka Vacuum Cleaner Co. Earlier, he was associated with Sears, Roebuck & Co. in advertising.

Goldblatt's Offers Up to \$100 on Trade-Ins

CHICAGO—A "famous brand appliance trade-in sale" in which as much as \$100 would be allowed on electric refrigerators, was advertised here recently by Goldblatt's department store.

Products of 11 manufacturers were listed on which trade-ins would be taken. The manufacturers were Westinghouse, General Electric, Philco, Norge, Servel, Bendix, Thor, Colman, and Apex, as well as ABC, and Premier.

Though the trade-in ceiling on refrigerators was set at \$100 "depending on age and condition," the ceiling on washers and ironers was \$50, and the top on vacuum cleaners was \$25.

Goldblatt's declared in the advertisement that it was maintaining the fair trade price on the appliances offered, but was able to allow such a generous trade-in allowance because its 15-store operation would permit it to dispose of large stocks of used appliances.

Twenty per cent down and 15 months to pay were offered. A coupon asking for a store representative to call and appraise the old appliance was included in the advertisement.

To Reach All Key Men . . . in the Refrigeration and Air Conditioning Industry throughout Canada, use the only Canadian publication covering the field . . .

CANADIAN
Refrigeration JOURNAL
A "National Business" Publication
137 Wellington St. W., Toronto, Ont.

Are You Looking for An Easy Way to Handle Stoves, Refrigerators and Freezers

Solve Your Problem with the New **ROLL-OR-KARI Dual Trucks**

Patented Step-On-Lift • Folding Handles
Capacity 1000 Lbs. • Shipping Weight 40 Lbs.
WRITE TODAY

THE ROLL-OR-KARI CO.
MANUFACTURERS
ZUMBROTA • MINNESOTA

"Same insulation they use in the best commercial refrigerator cases!"

IT WORKS BOTH WAYS

"Same insulation they use in most home refrigerators today"

FIBERGLAS insulated

OWENS-CORNING
FIBERGLAS

THERMAL INSULATION

Fiberglas is the trademark (Reg. U. S. Pat. Off.) for a variety of products made of or with glass fibers by Owens-Corning Fiberglas Corporation

Frozen Food Industry Warned About Growth Of Corporate Farming

BUFFALO—Undersecretary of Agriculture Albert J. Loveland sounds a warning to the frozen food industry that the growth of corporate farming as an auxiliary to food processing might prove dangerous. Loveland made known his beliefs during an address before delegates to the 63rd annual New York State Canners Association.

"Corporate farming is certain to erode goodwill from your relations with growers, especially in periods of heavy supplies," he declared.

"It would be obvious and normal to expect corporate producers to give market preference to their own crops. The hostility this could create would be equally obvious and normal."

The undersecretary added that he knew of no instance where such a situation has developed to date but said that it would be wise for the food-processing industry to take it into consideration in planning the future.

Lawrence S. Martin, Washington, secretary-manager of the Association of Frozen Food Packers, told the delegates that vegetable consumption in the United States has increased 2½ times from the 1942-43 period to the 1947-48 period.

Martin characterized the frozen food industry as a "wartime baby" that "is now an adult with a great future."

"The increasing interest of chain stores and the increased sale of home freezers is certain to have a favorable effect on the entire frozen food industry," he said.

Bendix Announces Ryker, And Burkhart Appointments

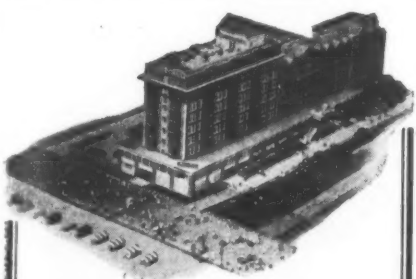
SOUTH BEND, Ind.—Promotion of Russell D. Ryker to assistant manager of quality control and appointment of Louis J. Burkhart as chief inspector have been announced by Virgil C. Rice, director of manufacturing for Bendix Home Appliances, Inc.

Ryker has been in the quality control division since 1943. Burkhart formerly was employed by Ingersoll Steel Div. of the Borg-Warner Corp.

Wooden Washer Wins 'Oldest Maytag' Contest

ERIE, Pa.—Felheim's appliance department attracted wide attention with a recent contest in which it offered a new Maytag washer to the person bringing in the oldest Maytag washer in the Erie area.

The oldest washer was presented by Mrs. W. H. Hovis. Factory records showed it was an old wooden model made in 1920. It was put on display by Felheim's and featured in a newspaper advertisement announcing the contest winner.



HOTEL STRAND

ATLANTIC CITY'S HOTEL OF DISTINCTION

Devoted to the wishes of a discriminating clientele and catering to their every want and embracing all the advantages of a delightful boardwalk hotel.

Spacious Colorful Lounges—Sun Tan Decks atop—Open and enclosed Solaria—Salt Water Baths in rooms—Garage on premises. Courteous atmosphere throughout.

When in Atlantic City visit the
FAMOUS FIESTA LOUNGE
RENOWNED FOR FINE FOOD

OPEN ALL YEAR
Under Ownership Management
Exclusive Penna. Ave. and Boardwalk

Tests Show Low Temperature Storage for Frozen Pork Is Better, But Question of 'How Low Is Practical?' Remains Unanswered

WASHINGTON, D. C.—"Lower storage temperatures for frozen pork do appear to be best, but how much better temperatures below 0° F. are still remains an unanswered question. One wonders if below 0° F. storage, while better, is still economical."

This was a typical question which came up at the recent annual meeting of the American Society of Refrigerating Engineers following a discussion of tests on storage temperatures for frozen pork presented by Dr. Gladys E. Vail of Kansas State college.

"We have concluded," Dr. Vail said, "that -10° and -20° are definitely better than 0° or 10°, especially for storage longer than 12 weeks."

Describing the tests which were conducted by herself and others at the Kansas Agricultural Experiment Station, Dr. Vail explained that nine pork carcasses of known history

were chilled for three days, after which the pork loins were cut out and frozen at -35° F.

Samples in the first series of tests were stored at 10°, 0°, and -10°, while the second series was held at temperatures of 0°, -10°, and -20°.

"In the first series we didn't note any excess freezer burn or discoloration of fat, and there was little weight loss," said Dr. Vail. "Storage at -10° F., however, in the first series, did mean slightly more weight loss in cooking."

"There was also slightly greater press fluid from the frozen than the raw pork, and there was a definite increase of press fluid after cooking the frozen pork."

Palatability tests for juiciness also showed that "frozen meat was lower than fresh pork with one exception," and that the relation of press fluid with palatability was an inverse one, the speaker indicated.

"There was little difference in palatability after 72 weeks, and the mechanical shear test results were not consistent with palatability scores. No definite trend could be shown in the study," Dr. Vail commented.

As for the palatability of fat in the first series, the pork stored at 10° gave the lowest score after 56 weeks, and showed an apparent increase in palatability after 72 weeks storage.

"Peroxide numbers tend to agree with the palatability scores on fat, and the free fatty acid numbers showed a definite increase for the 10° storage and some increase at 0°.

"We don't yet know how significant these facts are," admitted the speaker.

The palatability scores of the lean pork was parallel with the fat, though these didn't run so low, she said.

"In the second series the flavor of fat in the pork held at -20° F. showed a definite drop after 36 weeks' storage, while after 24 weeks the fat at 0° dropped sharply."

The peroxide values were not in line with the scores for palatability, but "the flavor of the lean pork in the second series after 48 weeks showed very little drop even at a temperature of 0°."

The previously mentioned comment questioning the economics of below 0° storage came from W. H. Cook of Ottawa, Canada, who also pointed out that testing meat from different carcasses brings up the problem that "two animals may provide more differences than the storage tests themselves. The authors, however, have localized the problem. It would indicate that fat deterioration influences lean deterioration."

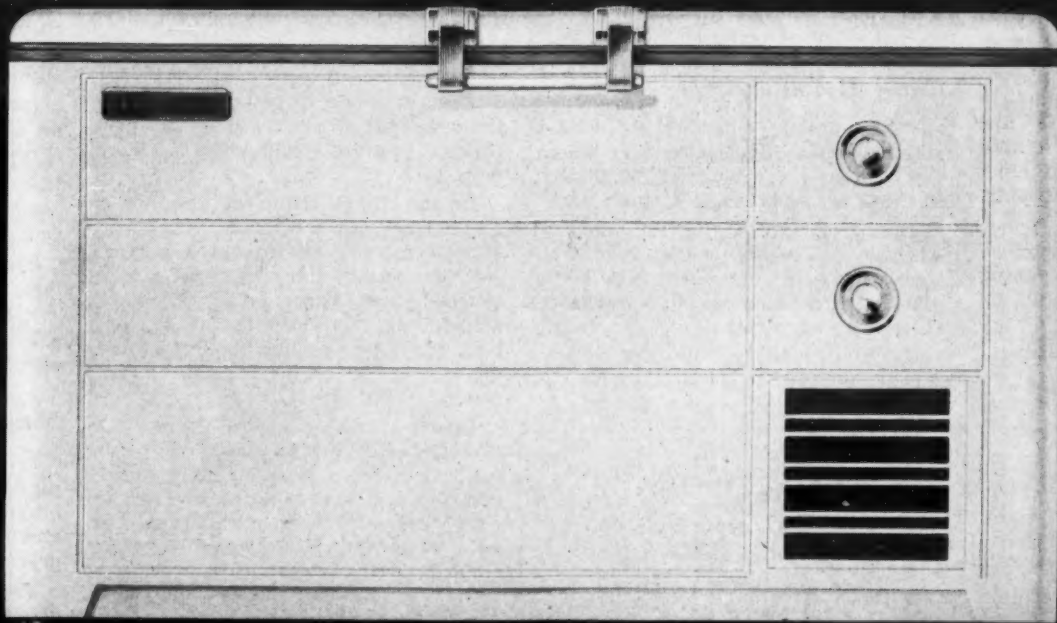
Whether there was any temperature fluctuation during storage was brought up by William F. Renner of Carrier Corp.

"Temperature changes were noted by maximum and minimum thermometers, and the fluctuation was limited to plus or minus 2° F.," explained Dr. Vail.

SCOOP
your freezer
market with
America's finest..

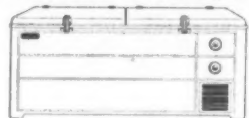
The new 1949 **BEN-HUR**
FARM AND HOME FREEZER

Styled by BROOKS STEVENS, Nationally-Known Industrial Designer

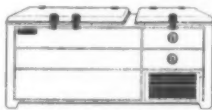


SEE the Complete 1949 BEN-HUR Line
at our Permanent Exhibit, Room 528
AMERICAN FURNITURE MART
Chicago, January 3 to 15

... A BEN-HUR to fit every family



18.45 Cubic Feet



12.5 Cubic Feet



9.19 Cubic Feet

Ben-Hur COMPLETE LINE Sales Advantages...
The 1949 BEN-HUR Line again covers models for EVERY family—9.19, 12.5 and 18.45 cubic foot sizes—to fit food freezing and storing needs from 450 lbs. to 900 lbs.

New Ben-Hur Warranty Protection Plan
BEN-HUR's Warranty Protection Plan, at no extra cost, includes:

FIVE Year Warranty on Condensing Unit, and ONE Year on component parts. This is unique protection that demonstrates the complete confidence you may enjoy in selling the 1949 BEN-HUR Farm and Home Freezers.

... PLUS all these time-proven BEN-HUR Features

• Separate Freezing Compartment • All-Steel Construction • Temperature Indicator • Patented Cold Control • Table-Top Design • Safety Hardware • Counter-Balanced Hinges • "Slamless" Dual Latches • Hermetically Sealed Insulation • Sealed Inner Lining • More Effective Cold Contact • Positive Cold Seal • Hermetically Sealed Refrigeration Unit • Pure Copper Tubing

CHECK THEM ALL... and you'll choose the NEW 1949 BEN-HUR LINE

Built to new leadership standards in BEAUTY • DESIGN • ENGINEERING WORKMANSHIP • PERFORMANCE

For 1949, BEN-HUR offers you today's most exciting selling combination of beauty and performance in freezers! Styling—by Brooks Stevens—is a distinct departure from standard freezer design—combining beauty with utility. The new cabinet-front motif, with indented vertical and horizontal lines, provides new symmetry and balance, and, just as important, adds greater rigidity to the cabinet.



New Dual Latches, widely spaced, with a connecting bar of crystal-clear Lucite add novel brilliance and beauty—and simplify cover opening and closing. Gleaming white baked enamel, with sparkling chromium metal parts, plus a touch of "Ben-Hur Blue" enamel inlay, complete a "picture" that inspires quick attention. And the many new performance features give you a home freezer sales story that just cannot be duplicated today—for easy selling and years of customer satisfaction. Make the BEN-HUR your Profit-Line for 1949!

Look for
these
"Extras"...



- Complete food baskets and dividers—(Standard equipment)
- New handy ice trays and racks—
- New Ben-Hur Alarm System—
- Special Locks for Dual Latch Handles—

BEN-HUR FARM AND HOME FREEZERS

DEPT. AC, 634 EAST KEEFE AVENUE
MILWAUKEE 12, WISCONSIN



INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

in a hospital after contracting a mysterious fever. An intern in that hospital took Thorpe's temperature, shook his head doubtfully, and muttered:

"Hm-m-m, looks pretty bad. You're running a temperature of 103."

"Yeah?" rejoined the renowned athlete, sitting upright. "What's the world's record?"

Ted Lyons

Ted Lyons, long-suffering ex-manager of the underpaid Chicago White Sox, had to put up with an ill-assorted agglomeration of over-age has-beens and green rookies every season during his sad tenure of office.

Because the owners were so penurious with player-buying funds, he was forced to pick up waivered veterans and overlooked rookies—and attempt to weld them into a team (along with surprised-to-be-signed youngsters from Chicago's sandlots).

Amazingly, Ted Lyons always managed to win a number of crucial games each season. At the darndest times, his raw rookies would come through with brilliant performances. The Lyons Luck became proverbial in the American League.

One of the unmanageable "characters" Lyons relied upon is an obese pitcher—obtained on waivers—who loves to eat more than anything else. This pitcher possesses a bewildering fast ball with a hop on it—when he can control it. He also owns an appetite of Brobdignagian proportions.

Munching away on a "hot dog" in the White Sox dug-out one fine August afternoon, this trencherman was thumbed into a game against the murderous Boston Red Sox by Manager Lyons.

"Who's up?" the ever-hungry relief pitcher interrogated, wrapping the remainder of his "hot dog" in waxed paper.

"DiMaggio, Williams, Stephens, and Doerr."

"Hold this sandwich for me—will

you, pal?" he interjected. "I'll be right back."

Ted Williams of the Bosox, who is reputed to have "muscles in his ears," also has both a sense of humor and a terrible temper. But his sense of humor overweighs his tempestuousness.

Umpire Cal Hubbard was behind the plate one sunny afternoon in Detroit's Briggs Stadium when Williams swung aimlessly at the first two strikes.

Pitcher Virgil Trucks whammed a third strike across the platter. Ted kept his bat on his shoulder, and was called "out." He screamed:

"You missed that one, Hubbard."

"Heh, heh," laughed Man-Mountain Hubbard, "mebbe I did, but you missed the first two strikes."

Lou Boudreau

Not since the immortal double-play combination of Tinker-to-Evers-to-Chance has major league baseball witnessed such thrilling infelding as Lou Boudreau and Joe Gordon put on for the Cleveland Indians in 1947 and 1948. They cut off so many legitimate base hits with their spectacular fielding that opposing batters almost lost their minds.

In one three-game series at Shibe Park, Philadelphia, Boudreau and Gordon executed eight double plays, and robbed Connie Mack's batters of at least seven extra-base hits. An impressed sportswriter for the *Philadelphia Enquirer* asked Playing Manager Boudreau how they did it.

Boudreau seemed surprised, according to the interviewer.

"Why, we just study the batters, and shift properly," he said. "Anybody could do it."

When Al Simmons, a coach for the Philadelphia Athletics, read this story the next morning, he snorted:

"Yeah! Anybody could make plays like that Boudreau, he says. Cut off his arms and legs and he'd be like any other shortstop in the league."

Babe Herman

Who, among baseball's lustiest sluggers, has hit the longest home run? There are several candidates for this unofficial record, such as:

Jimmy Foxx, of the Philadelphia Athletics and Boston Red Sox, who cleared a fence 505 feet from home plate with a home run in a Jacksonville, Fla., spring training game.

Hank Greenberg, of the Detroit Tigers, who smashed prodigious but unmeasured wallops over the bleachers in both the Boston and Chicago American League parks.

ers in both the Boston and Chicago American League parks.

Ted Williams, of the Boston Red Sox, who is the only man ever to smack a baseball onto the towering roof of the right field stands at Briggs Stadium, Detroit. Ted also clouted a 460-foot homer into the center-field bleachers at Fenway Park in Boston.

The immortal Babe Ruth, in an exhibition game in Tampa, Fla., is said to have rocketed a 550-foot home run. And that's probably the record, unless we take into account Babe Herman's feat:

Shortly after leaving the Brooklyn Dodgers, where he is remembered for the number of times he was beamed by fly balls, Herman joined the Hollywood Club in the Pacific Coast League. On his first trip to the plate, he slammed a ball out of the park and into an open flat car of a moving freight train. The ball traveled 83 miles before its forward progress ended, Herman swears.

Ty Cobb

Sportscaster Harry Heilmann, one of the greatest right-handed hitters baseball has ever known, played with and under the unpredictable Tyrus Raymond Cobb.

One season when Heilmann was batting over 400, and Cobb and Bobby Veach weren't far behind, Manager Cobb's Detroit Tigers had a weak pitching staff. Exasperated by the failure of his hurlers to pour it on for more than four or five innings before being knocked out of the box, Ty Cobb passed a law:

Each pitcher would work three innings—no more, no less. While on the mound, every finger was supposed to pitch his heart out, realizing that he'd be relieved after three stints on the mound.

First game this theory was tried out satisfied Cobb that he was a genius. The three consecutive pitchers held the Chicago White Sox scoreless, and the Detroit Tigers won the game 2-0.

Next day the three-pitchers-three-innings rule worked almost to perfection again, and the Tigers won, 5-1.

In the third game of the series against the White Sox, the first Detroit pitcher hurled three perfect innings: no hits, no walks, not a man reached first base. And when he struck out the ninth batter to face him, the Tiger pitcher looked strong enough to go on through to no-hit fame.

Ignoring the howls from the bleachers, Cobb held steadfast to his formula. He jerked this "hot" thrower, and sent in a new one at the beginning of the fourth frame. In succession, this pitcher gave up four singles, two doubles, three walks, a triple, and a home run.

When Cobb reluctantly came to the conclusion that this off-form pitcher might never retire the side, he sent him to the showers. The Tigers lost that game, 16 to 5.

And the three-pitchers-three-innings-each formula was never mentioned again so long as Cobb managed the Detroit Club.

Tommy ("Mr. Clutch") Henrich of the New York Yankees swears that Catcher "Yogi" Berra has never recovered from a childhood frustration.

"Oh, the ignominy of it all," Tommy wails, burying his head in his arms. "Little Master Berra was taken to the St. Louis Zoo when he was five years old. . . . But the Keeper rejected him!"

Brooklyn Dodgers

Traditionally, the Brooklyn Dodgers baseball fans are the most rabid in the nation. Traditionally, too, their favorite diamond performers can do no wrong. There was "Babe" Herman, for instance . . . and other strange characters by the dozen . . . all of whom the fans worshipped.

At the outset of the 1948 National League pennant race, the Dodgers management traded off that aging outfielder "Dixie" Walker ("the Peepul's Cherche" in Brooklyn) and the almost-equally popular Eddie Stanky (a "good-field-no-hit" second baseman).

Brooklyn fans responded to this outrageous selling-down-the-river of their favorite players by sitting home, listening to their radios, instead of paying to see the games at Ebbetts Field.

"No Walker, no Stanky, no me"

was their slogan. And the Dodgers not only lost at the gate, but dropped in the pennant race, too.

Well . . .

Outside each entrance to the Brooklyn baseball park the Fire Department has erected a sign which reads: "Capacity: 32,000. To admit more is unlawful."

Underneath each of these signs a disgruntled Lover of Dem Bums has painted, indelibly: "And impossible, this season."

An event peculiar to the annals of baseball occurred in 1936, when a Portland player was credited with a home run on a fly caught by a center fielder.

The batter hit a long fly toward San Francisco's Outfielder Jimmy Graves. Graves backed up to catch the ball and, as he did so, he backed into the outfield fence. The fence crashed beneath his weight, hurling both player and ball to the outside of the park.

Thus the hitter was credited with a home run, because the fielder had deflected the ball over—or through—the fence.

Cal Hubbard

Cal Hubbard (presently an American League baseball umpire, and in past years a feared professional football player) is a Big Hunk of Man—and mighty handy with his "dukes."

Warned that he should be conveyed by a police escort back to his hotel after he had delivered a "bad decision" at a night baseball game at Shibe Park in Philadelphia, Hubbard bared his fangs and his muscles.

"Harrumph," he grunted. "I can take care of myself."

So Umpire Cal Hubbard chestily took the Long Way Home on foot (it was then around 1 a.m.).

Sure enough, he was waylaid at the entrance to an alley by a dubious character who stepped out in front of Hubbard and asked, mildly: "What time is it, now, pal? My watch has stopped."

Cal figured this was a prelude to an assault, and reacted primitively.

Whomp! Round-house-fast-to-the-jaw.

"That's what time it is," growled Cal. "One punch for one o'clock."

The character picked himself up, felt his jaw gingerly, and bumbled:

"Jeez, it's lucky I am that I didn't ask you what time it was an hour ago."

Name Withheld

Outside of fast-ball pitchers, few players like night baseball. Among other reasons, it upsets their routine, and leaves them nothing to do in the preceding afternoons.

Feeling sorry for themselves on the afternoon before a night game in Chicago, two Boston outfielders dropped into a bar for a short beer or two. The company was congenial, and the beer mighty tasty on that hot August afternoon. When they left for the ball park, they were seeing not double, but triple.

First time at bat, Outfielder A, hitting in the third slot, smacked a double to the left-field corner. Outfielder B, the clean-up man, struck out, ending the inning.

As they loped out to the far gardens, the striker-outer said to Outfielder A, thickly:

"Dammit, I shaw three balls every pitch."

"Sho did I," advised the Joe who had doubled. "But I was shmart. I hit the middle one."

Two innings later the effects of all those beers hadn't worn off yet, and again Outfielder B struck out. When he returned to the dug-out, his drinking pal berated him:

"Whyncha do what I told ya—hit the middle one?"

"Did," confessed Outfielder B. "But dammit, I shouldda used the middle bat."

When Mike Gonzales, the colorful Cuban, was coaching the St. Louis Cardinals, he made an earnest attempt to master the English language. Did pretty well, too. Got to the point where he was invited to make luncheon speeches.

One night Mike was orating at a civic banquet in St. Louis. The guests warmed up as he went on and on about what a wonderful city they had. Movingly, Gonzales perorated:

"In fact, I hope to live long enough to spend the rest of my life right here in St. Louis."

During an unmatched five-year stretch, Rogers Hornsby compiled a phenomenal .406 batting average.

In the fifth year of that almost unapproachable hitting streak, a rookie pitcher who had just arrived from the International League asked his catcher if Hornsby had any particular "weakness" at the plate.

"Yeah," spat the catcher. "He's gotta weakness for singles."

Before Al Schacht achieved immortality as baseball's foremost comedian, he was fairly well known as a major league pitcher. How he got his chance in the Big Time is an amusing story. Week after week, so the story goes, mysterious fan letters were received by the Washington Senators' owner-manager, Clark Griffith. All of these letters were identical. They read:

"Dear Mr. Griffith:

"You should know about Al Schacht's pitching. He is wonderful. Now pitching for Elmyra. As I used to play baseball myself, I know a good pitcher when I see one. Sign him up before someone else does."

A. Fan."

This torrent of mail eventually influenced Griffith to visit Elmyra, where he witnessed this boy wonder in action.

Schacht, who was in fine form that day, pitched a shutout game. So Griffith, without further ado, signed this promising young lad. It wasn't until several years later that Schacht confessed that he himself had been the author of his many ardent fan letters.

Dizzy Dean

In a St. Louis bistro one night, the one and only Dizzy Dean regaled fellow-sportscaster Lyall Smith with this patently true story:

"Frankie Frisch is managing the Cardinals," The Great Diz began, "and we're not going so hot at the time. Some of the fans and sports writers are giving our manager plenty of you-know-what, and Uncle Frankie is getting mighty touchy."

"I'm pitching against the Giants this particular day, and I'm having one of my usual great afternoons. You know how I used to murder 'em—a two-hitter up to the ninth inning and we're leading 1-0. I've only let three guys get to first base, and while maybe I should have been working on a no-hitter I don't figure I'm goin' so awfully bad."

"Well, up comes the ninth inning and the first batter lays down a little bunt that goes for a scratch hit when our third baseman over-runs the ball. I strike out Mel Ott and the next guy works me for a walk. I strike out the fourth batter, of course, but the one after that hits an easy bouncer to our shortstop who messes it up to load the bases."

"Then the next batter hits a lazy fly ball to left field and, consarn it, my guy out there is dreaming about his girl in Waxahachie or sumpin and the ball pops out of his glove to let two runners come home."

"I strike out the last batter but we get shet out in the last of the ninth and lose the game, 2-1, with both runs against Old Diz unearned."

"I go into the clubhouse and Frisch is tearing up the jernit. He is ranting and raving and fuming around the mouth like a rabid dog. I figger he will come over and let me rave with him but instead he climbs up on a bench and beats his head against a locker. Then he points that bony first finger at me. So help me, he hollered:

"And they expect me to win a pennant with a bunch of lugs like you! What am I—a miracle man? I ain't even got a pitcher who can pitch a shutout. . . ."

Joe Jackson

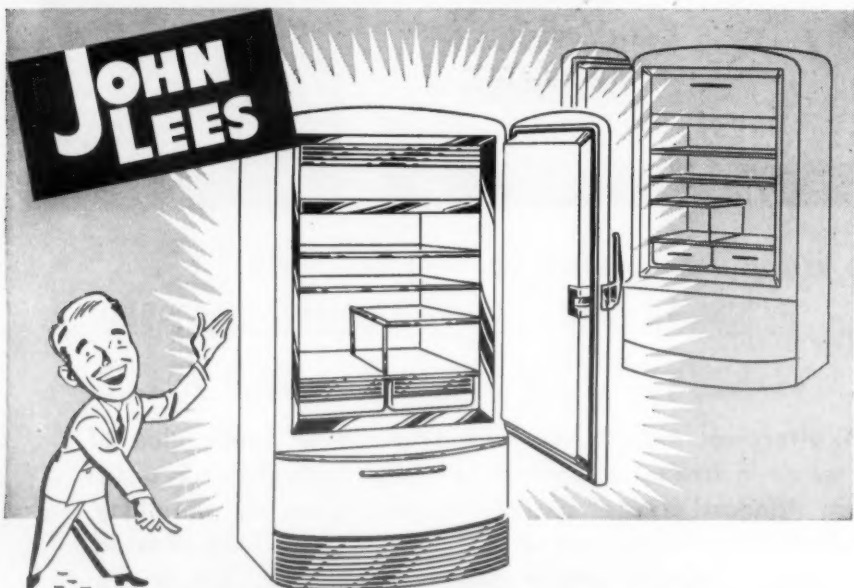
Shoeless Joe Jackson challenged Ty Cobb for the American League batting championship one year during Cobb's incredibly long reign of supremacy at bat.

Jackson couldn't read, but he had learned how to decipher the numbers in a box score. One morning, as usual, Jackson bought a newspaper. He turned to the sports section and looked at the box score of yesterday's game.

"Hey!" he yelled. "Yesterday I had a double and a single. And here I'm down for only one hit!"

"That's probably a typographical error," explained the newsboy.

"Typographical error nuthin'," shouted Shoeless Joe, "none of them fielders ever touched the ball."



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Kilgore Avenue Muncie, Indiana

New Appointees



Robert Carvell John Marling

Alco Names 2 Engineers In Michigan-Ohio Area

ST. LOUIS—Appointment of two field engineers in the general Ohio-Michigan area has been announced by the Alco Valve Co. here.

John H. Marling has been assigned to cover Ohio, West Virginia, and western Pennsylvania. He has his headquarters at Dayton, Ohio.

Robert W. Carvell has been given the Michigan, northwestern Ohio, and northeastern Indiana territory. Marling, who joined Alco after two years as field and application engineer with Chrysler Airtemp, received his degree in mechanical engineering at Purdue university. He is a member of the American Society of Refrigerating Engineers and of the Engineer's Club of Dayton.

Carvell is a graduate of the Alco engineering department and is also a member of the A.S.R.E. He attended Colorado school of Mines and Washington university of St. Louis. He was with the Curtiss-Wright Corp. early in the war and later spent two and a half years with the U. S. Army Air Force in the Pacific.

White Refrigeration Supply Opens Davenport, Iowa Branch

DES MOINES, Iowa—Opening of a new branch at Davenport, Iowa has been announced by the White Refrigeration Supply here. The Davenport branch, located at 818 E. River Rd., features a self-service department.

Fred Jenness, formerly with the Minneapolis Star and Tribune, has been named manager of the Davenport operation, according to the company.

Thralls Directs Service For J. A. Williams Co.

PITTSBURGH—Leroy Williams, president of the J. A. Williams Co. has announced the appointment of M. R. Thralls as director of service. B. H. Tron will continue in his capacity as service manager.

Thralls was previously associated with Westinghouse Electric Corp. and is a graduate of the George Washington university.

insist on genuine

products

MARLO-HEAT TRANSFER Since 1925

Denver School Instructs Owners, Employees In Fountain, Luncheonette Operation Methods

DENVER—Establishment of a soda fountain, luncheonette, and sanitation school to train both employees and operators in efficient methods of food service was announced here recently.

The school is the brainchild of James Dansberry, owner of the Dansberry Pharmacy in downtown Denver and chairman of the board of directors who will manage the school.

Dansberry enlisted the aid of both the local retail drug association and the Colorado Restaurant Association in setting up the training school.

Classes will be held in the Emily Griffith Opportunity School at 12th and California Sts. here. The classes will cover the four subjects of soda fountain, luncheonette, sanitation, and culinary management in a five-hour day running from 9 a.m. to 2 p.m.

All classes will be taught by Hardy Wetherell, manager of the fountain-luncheonette at the Dansberry Pharmacy, who is a veteran of 27 years in soda fountain operation.

Students will use manuals prepared by Dansberry and the restaurant association. They will also see a color movie "Right and Wrong" provided by Swift & Co.'s ice cream division.

Superior Distributing Co. Purchases 5-Story Bldg.

KANSAS CITY, Mo.—Superior Distributing Co., distributor of household and commercial appliances in Missouri and Kansas, has announced the purchase of a five-story and basement building at 16th St. and Baltimore Ave. here.

Purchase price and contemplated cost of remodeling will approximate \$175,000, company officials said.

Superior plans to put up a modern front, build air conditioned offices and display rooms on the ground floor, add new receiving docks and shipping facilities, and install a conveyor system for merchandise handling between floors.

The company will allot the second floor to a parts department and a phonograph record division. The upper three floors will be used for warehouse space.

J. H. Wimberly, Jr. is president of the three-year-old distributorship. Harry C. Feingold is secretary-treasurer. The firm has 75 employees and holds more than 100 appliance franchises.

Winkle Names Cranston Fiberglas Corp. Comptroller

TOLEDO—The appointment of Hal M. Cranston as comptroller of Owens-Corning Fiberglas Corp. was announced recently by Harry R. Winkle, vice president and treasurer.

Cranston joined Fiberglas at the time it was founded in 1938, as general supervisor of accounting. In 1943 he was appointed assistant treasurer and auditor.

Seeger Co. Nets \$1,018,837

ST. PAUL—Seeger Refrigerator Co. here has reported net earnings of \$1,018,837, after Federal and state income taxes, for the three months ending Nov. 30.

In the same quarter last year, Seeger reported earnings of \$830,777 after taxes.

A.L. Golay Represents Kold-Trux In Midwest

ST. LOUIS—A. L. Golay, formerly midwestern representative for the Kold-Hold Mfg. Co., has joined Kold-Trux, Inc. here and will cover approximately the same territory as formerly. He adds the states of Indiana and Ohio to his former territory, and gives up Missouri and Illinois.

Prior to joining Kold-Hold, Golay was an advertising agency account executive in Grand Rapids, Mich.

The Kold-Trux line of refrigerated truck units is powered by a mechanical drive taken directly off the propeller shaft of the truck coupled with an electric motor drive for standby operation.

Wayne Wire Cloth Products, Inc. Moves to Larger Quarters

WAYNE, Mich.—Wayne Wire Cloth Products, Inc., manufacturer of strainers, has moved to larger quarters at 44052 Yost Rd. here, the company has announced. Telephone numbers are Wayne 1032 and Logan 1-1819.

4 Major Refrigeration Installations Completed In Omaha Food Stores

OMAHA, Neb.—Four Omaha food stores have just completed major refrigeration installations.

They include a Hinky-Dinky supermarket which opened a pre-packaged meat department, Sherman's Market which installed a new and complete sea food department, and O. P. Skaggs System Stores supermarket with a self-service meat department, and Roffman's which opened Dec. 12 with the latest in refrigerated vending fixtures throughout.

Roffman's has installed 56 ft. of self-service open display refrigeration cases for produce, frozen foods, and dairy products. Enclosed refrigeration cases have been installed in the meat and delicatessen departments, along with a walk-in refrigerator for meats. Refrigeration was installed by the Sol Lewis Co. of Omaha.

The new Skaggs store at 1712 Vinton St. also has reach-in cases for fresh frozen foods, dairy products, and fresh produce, in addition to the pre-packaged meat section.

BEER FLOWS FAST
AT 5¢ A GLASS...



... yet every glass is cooled to perfection with TEMPRITE

One of the most delicate of all beverages is beer. Careful handling from the brewer's kettle to the tavern tap is a must.

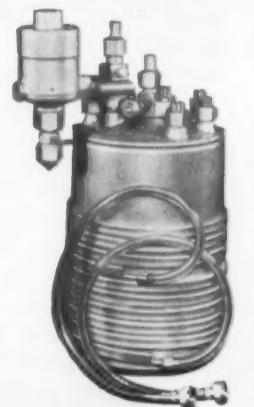
If beer is too warm, the foam runs wild and profits run down the drain.

If beer is too cold, the head is too thin and profits run down the customer.

Beer temperature must be right... from the beginning to the end of the keg... and that is why Temprite has long been standard equipment at the busiest bars. For no matter how heavy the demand, no matter how frequently the tap is opened during rush periods, Temprite-cooled beer is right. Every glass is cooled to perfection. Every glass has brilliancy, flavor and body. Every glass has a rich, creamy collar of the right depth.

It is for reasons like those above that refrigeration men everywhere are pushing trouble-free Temprite beer coolers for steady, substantial profits.

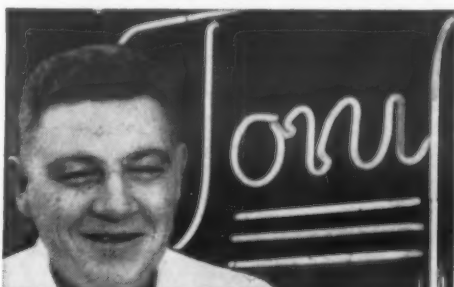
Drop us a card today for details.



8 TEMPRITE MODELS feature easy installation, all stainless steel coils. Heavy duty model above will cool 2 kinds of beer plus soda and plain water at the same time.



TED INMAN, popular and busy bartender at Tony's Westown Bar, 7645 Fenkell, Detroit, Michigan, says, "Since we started to sell nickel beer our volume has jumped plenty, but Temprite has never once let us down."



TONY PALOMBO, who opened his neighborhood tavern in 1935 with a Temprite Cooler, says, "When our customers start crowding the bar, our good old Temprite keeps just as cool as a cucumber. Every glass of beer is perfect, right down to the bottom of the barrel!"

REFRIGERATION AND AIR CONDITIONING UNITS • PARTS • TOOLS • SUPPLIES

NEW Latest Prices Wanted Lines

Write Today for Your Copy

Why spend valuable business hours and car expense on trips to buy parts? Get fast low-cost delivery from our large, complete stocks. Airol serves buyers in 48 States and overseas.

Wholesale Only Please Write on Your Letterhead



AIRO SUPPLY CO.
2732 N. ASHLAND AVENUE • CHICAGO 14, ILL.

TEMPRITE PRODUCTS CORP.

ESTABLISHED 1929



Originators of Instantaneous



Liquid Cooling Devices

45 PIQUETTE AVENUE

DETROIT 2, MICHIGAN

EVERYBODY IS A PROSPECT...

America's **BIGGEST LITTLE** RefrigeratorFreeze-O-Matic
JUNIOR

3 1/2 cubic foot REFRIGERATOR with 6 cubic foot CAPACITY!
Exclusive! Freeze-O-Matic's first with the scratch resistant Formica top... no dirt — no seepage!

Successful merchandising is the ability to adapt your product to multiple uses, new markets. Here, in the Freeze-O-Matic Junior, is the "little GIANT" with everybody a prospect!

Here's the ideal unit for modern apartments, kitchenettes, bungalows, dentists' and doctors' offices, laboratories, counter drug stores... and any place where space is limited. Just the thing, too, as that extra unit for basement, porch, home or office bar.

SOME EXCLUSIVE TERRITORIES STILL OPEN. WRITE, WIRE OR PHONE FOR FURTHER INFORMATION.



ACME-NATIONAL
REFRIGERATION COMPANY, Inc.
434 DEAN STREET • ST. 3-3040 • BROOKLYN 17, N. Y.

Nebraska Trade School Offers Refrigeration Course

LINCOLN, Neb.—The State Board of Vocational Education has inaugurated a course in household refrigeration, service shop, locker plant operation, and air conditioning at the Nebraska Trade School in Milford, with M. E. Maxwell and Mars Neptune as instructors. Thirty-three students have been enrolled.

A special building has been obtained for the course, with the \$20,000 appropriated by the last Nebraska legislature for purchase and moving of surplus army buildings to the trade school site.

A surplus walk-in refrigerator and locker plant have been installed in the building and are operated by the students, giving them actual on-the-job training.

They will learn repair of refrigerators by actually reconditioning old models, while air conditioning has been installed in the building by students as part of the class work.

All students will be given training in drafting and blueprint reading.

A tuition fee of \$47.50 for each four week period is charged, and working on a unit basis, according to individual ability, students will need from 18 months to two years to complete the refrigeration and air conditioning course.

1,000 See Distributor's New Place

PORTLAND, Ore.—The F. B. Connelly Co. of Oregon was recently host to more than 1,000 persons who visited and inspected its new facilities at 905 N. W. 12th Ave. here.

Brings Good Response

DECEMBER VALUE!
\$3.00 Service Special
On Household Refrigerators
The Following 10-Point Check-Over May Save You \$88 Next Summer

1. Clean Condenser	6. Check Cold Control Setting
2. Oil Motor	7. Check Door Gasket
3. Check Bell and Adjust	8. Check Hinges & Latch
4. Check Compressor Efficiency	9. Check Electrical Wiring
5. Check Refrigerant Charge	10. Check for Refrigerant Leaks

All this included in our December Special for any additional labor materials extra. PLEASE MENTION THIS AD

RICHEY'S Refrigeration Service
2931 W. 25th Ave. GL. 4735

\$3 December Special Keeps Servicemen Busy

DENVER—An energetic promotion aimed at keeping refrigeration mechanics busy during the ordinarily dull month of December was built around a \$3.00 "December Service Special" at Richey's Refrigeration Service, 2931 W. 25th Ave. here.

To keep the entire crew busy during the month, M. Richey, head of the firm, used a two column, 5-in. display advertisement in two Denver newspapers, which offered a 10-point checkup inspection and adjustment on household refrigerators at \$3.00. Pointing out that a timely inspection now may serve to save dollars next summer, the advertisement offers quick service.

The 10 points covered included cleaning the condenser; oiling the motor; checking and adjusting the belt; checking of compressor efficiency; checking refrigerant charge; cold control settings; door gasket, hinges, and latch, and electrical wiring; and checking for refrigerant leaks.

Each of these are listed on a special form developed by the company, which incorporates at the bottom space for any notations regarding possibilities of new refrigerator sales, or later overhaul work.

"A lot of new refrigerator sales, trades, and profitable rebuilding work have come from this source," Richey said. "We were agreeably surprised during December to find that a lot of homeowners, worried about future expense, responded to the advertisement."

Reimuller Introduces Perco Plastic Porcelain Kit In East

GLENDORA, Calif.—The Perco Plastic Porcelain kit, which has been used on the west coast for two years, is now being introduced in the east by Paul E. Reimuller, manufacturer and distributor, here.

Perco plastic porcelain is claimed to repair chips on all enamel or porcelain surfaces and to fill the chip in one application.

The kit contains a jar of white powder and a jar of blue white for perfect color match, Reimuller said.

The kit is offered at a dealer net price of \$14 less 50%. Reimuller's address is Box 274, Glendora, Calif.

Thompsons Open Appliance Service Firm In Long Beach

LONG BEACH, Calif.—Thompson's Appliance Service is the firm name under which Wilson E. Thompson and Eva E. Thompson have published a certificate that they are conducting business at 1133 Obispo Ave., here.

Gibson Tells Dealers How To Cut Up Co. Ad Mats To Suit Their Needs

GREENVILLE, Mich.—How an appliance dealer can make his own advertisements out of proofs of national advertisements and other advertising material was explained in a pamphlet sent to its dealers by the Gibson Refrigerator Co. here.

The company told the dealers: "A mat is a paper or plastic reproduction of an advertisement from which the newspaper makes a plate and prints. However, it is not necessary to use a mat in its entirety, should you want to eliminate certain parts of the advertisement."

"You can cut out the portion you want to run and fill in, for example, your own headline and copy. Or you can order several mats, combine the headline from one, illustration from another, and the copy from a third to make up your own advertisement Mats have a flexible use..."

The four-page pamphlet then went on to give detailed instructions with pictures, on just how these alterations can be made.

The pamphlet noted, "Any local newspaper man or printer will be glad to set up advertisements for you from mats or proofs supplied to you by Gibson."

G-E Alters Marketing of Premier Vacuum Cleaner

BRIDGEPORT, Conn.—Charles R. Pritchard, marketing manager of the General Electric Appliance & Merchandise Department has announced that, "after a very careful study and consideration of the future of our Premier vacuum cleaner business, we have decided to discontinue marketing these cleaners through the presently utilized wholesale distributor channels."

Premier vacuum cleaners had been sold for many years through direct house to house selling methods. Prior to the war distribution of the cleaners was established on a distributor-retailer basis.

After acquiring the Premier vacuum cleaner line a few years ago, General Electric carried on the marketing of the line through the then established Premier distributors.

"We regret the decision," Pritchard said, "that discontinues our fine distributing relations on Premier cleaners."

"To the extent of the limited factory stock of current Premier models distributors will be permitted continued purchase to balance out their stocks, thus to assist them in an orderly marketing of their present inventories."

The sale of service parts and Premier service will be continued through General Electric Appliance Service Centers and other authorized servicing organizations, according to Pritchard.

FOR EXTRA PROFITS...

Switch to

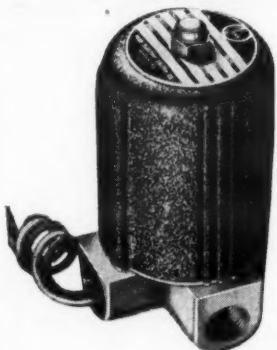
PENN!

Sell the plus values of PENN refrigeration controls... the greater accuracy, longer life and more dependable operation... plus values which mean fewer service calls, more customer satisfaction and extra profits for you!

Most versatile control in the air conditioning and refrigeration field is the PENN 270 series, the first and only load-carrying 2-pole switch. Available in "Single" temperature or low side pressure control and "Dual" control combining in one unit a temperature or low side pressure switch and high pressure safety cut-out.

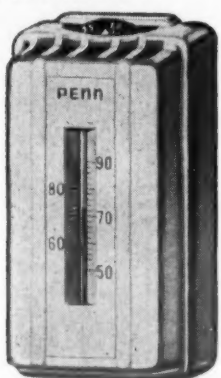
Recent additions to the PENN complete line are magnetic starters, with relays that reset automatically after a temporary overload condition has corrected itself. This plus feature is especially desirable in commercial refrigeration where perishable goods might spoil if automatic resetting were not available. However, if the installation requires manual reset, a simple change in spring position converts the control. PENN magnetic starters are built in sizes 0, 1, and 1 1/2.

Switch to PENN for the extra profit opportunity which comes with dependable control performance. Ask your wholesaler for information on PENN's complete line of refrigeration controls or write to Penn Electric Switch Co., Goshen, Indiana. Export Division: 13 East 40th Street, New York 16, U. S. A. In Canada: Penn Controls Ltd., Toronto, Ontario.



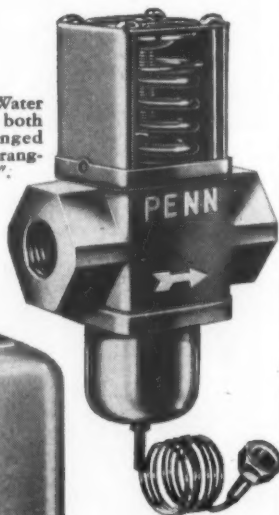
Penn Series 221 Solenoid Valves perform dependably in a wide variety of refrigeration applications.

Penn 270 Series Controls incorporate 2-pole construction and direct-reading calibrated scale showing both cut-in and cut-out points.

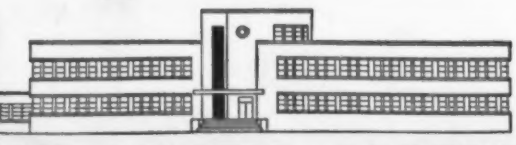


Penn Cooling Thermostat for applications where close and accurate temperature regulation are required.

Penn Series 246 Water Valves are built in both threaded and flanged styles and in sizes ranging from 1/2" to 2 1/2".



Penn Magnetic Starter provides both automatic and manual reset by easy change of spring position.

**PENN****AUTOMATIC CONTROLS**

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

Double Feature!

TODAY AND EVERY DAY

THAWZONE
PATENTED
THE PREMIER FLUID DEHYDRANT

THAWZONE, the moving dehydrant, circulates and searches out moisture, destroying it chemically. For new and reconditioned units, as well as old.

TRACE
REFRIGERANT LEAK DETECTOR

TRACE is a highly effective refrigerant leak detector. Its stable, red color reveals leaks promptly in old or new systems.

HIGHSIDE CHEMICALS CO.
195 VERONA AVE. NEWARK 4, N. J.

Lincoln Stores Use More Ads, Outside Selling And Improve Servicing as Competition Grows

LINCOLN, Neb.—With the return of highly competitive selling in the refrigerator and home freezer business, Lincoln dealers are gearing their merchandising programs to positive selling methods, including outside selling, increased advertising, and greater emphasis on service operations.

M. L. MacNabb, appliance department manager at Ward's, has instituted outside selling of refrigerators for the first time since the war, and has put into use a prospect card system in which cards are made up in duplicate.

The department copy is filed under the next contact date, and if a sale is made on that date, the salesman gets credit for the sale whether it is made at the store or outside. If the prospect doesn't show up on the assigned date, the salesman calls on him again.

The master card is kept under another file. If two salesmen should claim the same customer, it is looked up in the master file to see which one made the first contact.

If MacNabb gets a prospect who is on the "fence," he arranges for a demonstration, especially where home freezers are concerned.

CUSTOMERS ARE SHOPPING MORE

Customers are shopping around more than they used to, he pointed out, and it is necessary for the dealer to follow up on prospects. The dealer using outside salesmen has better than twice the chance of selling the "shopper" than has his competitor.

He now is using seven salesmen in the appliance department, and they work two days in the store and four days outside each week.

Advertising is tied-in with outside selling, emphasizing such copy as "Ask for Free Demonstration" and "We Give Free Demonstrations."

Where demonstrations are arranged in the prospective customers' homes, MacNabb has found through past experience that it pays to have the demonstration over the week-end, and to limit it to three days in order to prevent tying up too much merchandise. Seven out of 10 prospects who agree to a demonstration in the home will buy a home freezer, he declared.

Home freezer selling is about in the same position as refrigerators were 15 years ago, the Lincoln man stated. He has yet to sell a home freezer to a prospect the first time the latter looked at it.

Follow-up calls have to be made, he explained, and on the average it will take two or three such calls to close the deal. Selling emphasis must be on the economy-utility angle, and the prospect convinced that it is a practical convenience rather than a luxury.

MacNabb recently revived the telephone-selling technique on a dull

afternoon, calling 20 numbers selected at random from the phone book, and using vacuum cleaners as the item promoted.

Fifteen out of the 20 were found at home, and the salesman first identified himself and asked what kind of cleaner the householder owned.

If the latter had recently purchased a cleaner, the salesman congratulated her. If she didn't have a machine, or had an old model, he asked to give a demonstration. In two hours time, the salesman sold one cleaner.

EMPHASIS ON SERVICE

Myron D. White, manager of the White Furniture Co., said that greater emphasis is being placed on service. He had previously tried "farming out" service operations, but found that the outside agency didn't have the customer's interest sufficiently at heart, so he instituted his own department.

This is needed in order to keep customers coming back, he declared. He figures it will pay him to maintain an efficient service department even if he has to charge off 25% of the cost of operation to goodwill.

To keep the department operating efficiently, he keeps a service and order-parts record on which service calls are listed in consecutive order.

D. W. Dean, hard lines merchandiser at Sears, pointed out that no piece of merchandise is any better than the service behind it, so his firm considers it a "must" to maintain a complete service department.

This is just as important to new sales as are the selling floor and competent salesman, he declared, and the salesman has no better selling point than the service behind the refrigerator, home freezer, or washer.

EMERGENCY CALLS IMPORTANT

Service personnel is sufficiently large that if an emergency call should come in on a refrigerator or freezer, the repair can be made immediately. This is especially important with the home freezer, he explained, because of the considerable value of the food stored in such an appliance.

Dean added that his store aims to break even on service operations with approximately enough margin on replacement parts and paid service to cover the cost of the free service.

Object is to not make service a burden on store operation. Arctic Appliance Co. has just started to promote a general service business, and L. N. Waechter, co-owner, himself an experienced refrigeration mechanic, believes that when new appliance sales dip, the service department can be made a profitable operation.

War-time merchandise made it hard to break even on service, he added, but appliances now are coming through with closer factory in-

spection and in better mechanical condition.

In order to make service profitable, Waechter declared that the personnel situation will have to improve, but that improvement is rapidly approaching.

MORE GOOD MEN AVAILABLE

As supply catches up with demand and manufacturers reduce their forces, he believes more good mechanics, including electricians, appliance repair men, refrigeration servicemen, and sheet metal men, will be available to dealers.

Waechter's system for making the service operation profitable is to train mechanics to double as salesmen. The mechanic will suggest a new appliance when he finds one that is worn out.

He has the best opportunity in the world to make sales, the dealer asserted, and the public respects the judgment and suggestion of the trained mechanic much more than that of the ordinary salesman who is always dressed up. Somehow, the public is inclined to place more faith in the honesty of the man with grease on his hands.

Arctic Appliance Co. mechanic-salesmen will work on a commission basis on new appliance sales and on a weekly salary on service and repair jobs.

This dealer also emphasized the point that dealer cooperation and organization are becoming more im-

portant than ever before, in order to combat discount selling and ruinous price-cutting, both in service and sales.

L. L. Smith, proprietor of the Smith Furniture Co., said he would return to outside selling as the best method of meeting increasing competition. The refrigerator lends itself to outside selling better than any other appliance, he stated, while it appears that home freezers should respond well to such sales tactics in 1949.

Erie, Pa. Spindrier Dealer Takes In Washing

ERIE, Pa.—To promote the sale of Easy Spindrier washers, Niederriter Co., Inc. offered to do one week's wash free for persons coming in to see a demonstration.

For a limited time, the store invited Erie residents to bring in their week's wash and watch the Spindrier do the work in less than an hour. The store emphasized that it had plenty of parking space.

Admiral Names Distributor

CHICAGO — Appointment of E. Garnich & Sons Hardware Co., Ashland, Wis., as exclusive distributor of Admiral products for 11 counties in northern Wisconsin was announced recently by W. C. Johnson, general sales manager of Admiral Corp.

Top officials of the organization, which was established in 1872, are E. R. Garnich, president; A. B. Garnich, vice president; and Jack Shea, who will be in charge of Admiral products sales.

DON'T REBUILD Armatures

Save BY BUYING NEW

WAGNER Armatures



They have new core iron and windings, new commutators properly undercut, new shafts, new centrifugal short circuiting devices, new rocker arm and brush holder assemblies with brushes. They are dynamically balanced, fully tested, ready to install. Get them now from your Wagner distributor. Name on request.

Wagner Electric Corporation

2471 Plymouth Avenue, St. Louis 14, Mo. U.S.A. ELECTRICAL AND AUTOMOTIVE PRODUCTS

WILSON

REFRIGERATION, INC.

- FARM AND HOME FREEZERS
- REACH-IN REFRIGERATORS
- WALK-IN REFRIGERATORS
- FARM MILK COOLERS

DIVISION OF WILSON CABINET CO., INC. SMYRNA • DELAWARE

CURTIS REFRIGERATION

For All Your Refrigeration and Air Conditioning Requirements

Curtis Refrigerating Machine Division

of Curtis Manufacturing Company R-238 1912 Klenken Ave. St. Louis 20, Mo.

Established 1854

see **NATIONAL LOCK** first

FOR LOW TEMPERATURE REFRIGERATOR HARDWARE



WRITE FOR DESIGN DETAILS ON SURFACE, "THRU-THE-DOOR" AND "EDGE-MOUNTED" TYPES

NATIONAL LOCK COMPANY

ROCKFORD • ILLINOIS REFRIGERATOR HARDWARE DIVISION

Announcement

Refrigeration Contractors are the logical ones to sell, install and service equipment required to refrigerate George-Ann Warm Room Lockers and Walk-in Boxes.

We invite them to cooperate with our agents (openings for which are still available) who are especially trained in locker financing and operation, meat cutting, processing and merchandising, as well as in grocery store and locker plant layouts.

All inquiries will be promptly handled.

WRITE:

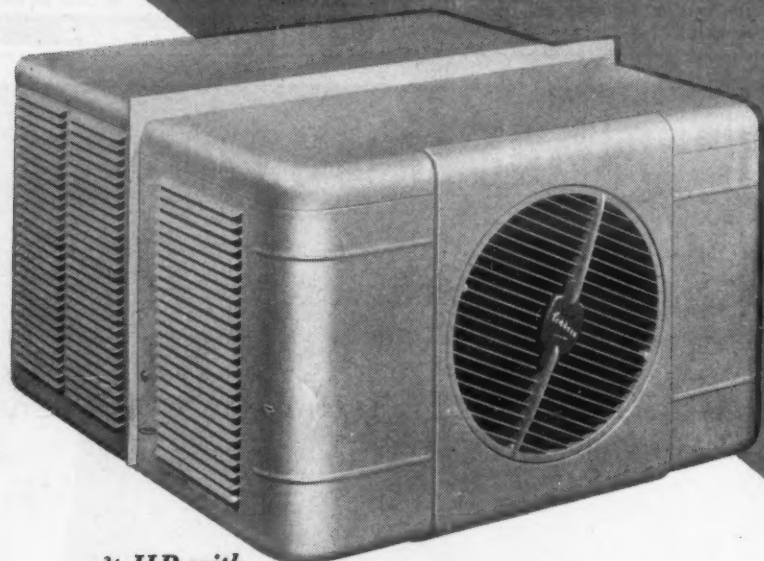
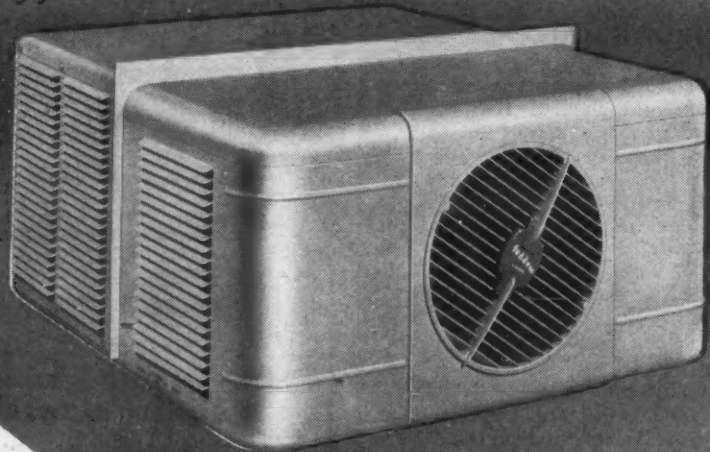
GEORGE-ANN COMPANY 321 HIGHLAND DRIVE SEATTLE, WASHINGTON



Fedders

MORE POWER ROOM AIR

1/2 HP with Ivory finish



3/4 HP with Ivory finish



1/2 HP with Walnut and Bronze finish

1/2 HP Models available with 115 volt, 60 cycle single phase motors.

3/4 HP Models available with 115 or 230 volt, 60 cycle, or 230 volt, 50 cycle single phase motors.

Window models? YES

3/4 HP with Walnut and Bronze finish



● Critical refrigeration and air conditioning men have been amazed at the COOLING POWER of Fedders Room Air Conditioners. They are the talk of the industry.

This COOLING POWER is the result of more than 50 years of Fedders experience as heat transfer specialists.

Backed by thousands of outstanding performance records in every climate in every part of America, the sales of Fedders Room Air Conditioners have grown like a rolling snowball. They have

opened up a new business for distributors and dealers everywhere.

Get behind this rolling snowball...push it and make it grow and grow and grow. Your business will grow with it.

Don't wait for your competitor down the street to get lined up for 1949 business. Now is the time to start by writing to:

FEDDERS-QUIGAN CORPORATION
BUFFALO 7, NEW YORK

COOLING POWER TO YOU IN '49 *with* AIR CONDITIONERS

console models?
YES

available
cycle
ors.

available
volt,
volt,
base

• Beautifully styled and finished window and console models make Fedders Room Air Conditioners at home in any surroundings. $\frac{1}{2}$ and $\frac{3}{4}$ HP window models are available in both harmonizing metallic bronze with burl walnut and ivory finishes.

Console models are finished in mahogany making a truly beautiful piece of furniture complementary to home and office.

Fedders has a *really* complete line of Room Air Conditioners having the beauty and the COOLING POWER that is the talk of the industry.



1 HP Console
with Mahogany
finish

$\frac{3}{4}$ HP Console
with Mahogany
finish



Try this 1-Second Test

1. Blow on the back of your hand.
2. Moisten the back of your hand.
3. Blow on your hand again.

Feel the difference! Feel the extra coolness! That is how Fedders puts nature to work. This natural way of cooling is the same principle as the Fedders evaporative-condenser action that contributes to Fedders amazing reputation for extra cooling power.

VISIT OUR SPECIAL SHOWING AT THE CONGRESS HOTEL IN CHICAGO DURING
THE HOUSEWARES SHOW JANUARY 3rd THRU 15th.

They'll Do It Every Time By Jimmy Hatlo



Do You Have 'One Foot In the Door'?

KOLD-HOLD
builds better plates
for every application

There are two big reasons why you can count on the performance of Kold-Hold Hold-Over and evaporator plates for every refrigerating installation.

FIRST: They are designed and engineered primarily to refrigerate efficiently and economically.

SECOND: They are built with care and to quality standards which assures that each and every Kold-Hold plate does its designed job to the fullest degree of satisfaction. Before any plate leaves the factory it is pressure tested under water and completely dehydrated.

This combination of engineered design and controlled construction is your best guarantee of peak performance.

Would you like to know more about how Kold-Hold plates can be used for quick freezing, chilling and holding, short period cooling, or for "Hold-Over" truck refrigeration? Complete descriptive literature is yours free — write today!

Labels: FOOD LOCKER, PLATE STAND, LINER, TRUCK PLATES, MEATS, HANGER BANK, PACKAGE UNIT, CONVERSION UNIT.

KOLD-HOLD

Jobbers in Principal Cities

KOLD-HOLD MANUFACTURING COMPANY - 500 E. HAZEL ST., LANSING 4, MICHIGAN

PROCESSING TRANSPORTATION
protects every step of the way
STORAGE

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark
registered
U. S. Patent
Office:
Est. 1926



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1949,
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F. M. COCKRELL, Founder

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Subscription Rates: U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: \$5.00 per year; 2 years \$8.00. All other foreign countries: \$7.00 per year. Single copy price, 20 cents. Ten or more copies, 15 cents each; 50 or more copies, 10 cents each. Please send remittance with order.

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VOLUME 56, No. 1, SERIAL NO. 1,033, JANUARY 3, 1949

Research Must Be Free

FREE ENTERPRISE is a regenerative process. It requires a continuing transfusion of new blood, new ideas, new corporations, new "risk money," and new products. That's why American industrialists and scientists should join American educators in a free partnership to maintain independent action and individual initiative in promoting and sponsoring the nation's scientific research projects.

Greatly increased federal support of education and research without a corresponding increase in the support of new projects and investigations by industry and private philanthropy is just one more nail in the coffin of collectivism which awaits stagnate, moribund nations.

Centralized control inevitably accompanies centralized support. If we in industry permit bureaucrats to supply the money for dreamers and experimenters to carry on their inquiries—through our own failure to do so—then we can expect government control of higher education and research.

Of course the federal government does have a responsibility for certain types of research. War, public health, agriculture—these have long been recognized as government prerogatives. And it seems inevitable that the government must continue to expend large sums on military research in the nervous years ahead.

Despite these concessions to expediency, we should all fight government domination of fundamental (or "pure") research. Bureaucrats are notoriously conservative, and unwilling to "stick their necks out"—just as the army's generals tend to think in terms of the previous war when they prepare for the next one.

Central direction of a large share of any nation's scientific investigations endangers progress, because complete freedom of inquiry to explore all phases of scientific experimentation is the only way knowledge can be expanded.

Research should never be directed. Only when explorers are privileged to go their own way do they ever happen upon new equivalents of the sulfa drugs or the radio. Discoveries can't be planned. Every Columbus sails an uncharted sea.

An antidote to government domination of fundamental research could be fulfilled from the following prescription:

1. The financing by industry of cooperative programs in which promising students spend alternate periods on a job and in the class room, thus combining practical experience with a sound theoretical training.
2. The setting-up of comparable in-plant training programs to encourage bright minds amongst employees of a particular company to implement their dreams.
3. The granting of scholarships and fellowships by private enterprise—thus helping the imaginative youngsters of each new generation to contribute their bit to our economy's regeneration.
4. Greater direct support of "pure" research by corporations and through individual bequests.
5. Utilization of the services of university research foundations by small businesses. (The big corporations do it all the time.)


In 1916 there were less than 100 industrial research laboratories in the U.S.A. Thirty years later 130,000 researchers were employed in more than 2,400 corporate laboratories, which were maintained at a cost of more than \$750,000,000. In spite of this rapid increase in private research facilities, less than 15% of all business firms which enjoy more than a half million dollars gross sales annually are subsidizing any research work at all.

And that's a shame.

Industrial research, if it is to remain free and progressive, is clearly a task for private enterprise—either in its own laboratories or on a sponsorship basis with public service organizations created for that purpose.

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The KEY to AIR CONDITIONING

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by James J. LaSalvia

Readers who have any questions regarding the application of air conditioning are invited to write to Mr. LaSalvia, the author of this series, who will be pleased to furnish a complete and detailed answer free of charge. This is another of the services provided by the News.

Automatic Controls

Automatic controls should be provided on all air conditioning systems. No matter if the system has been designed properly otherwise, automatic controls should be provided to control the system for proper room temperature.

On many systems, there are many steps through which the air must pass so that it is of proper quality and quantity before being distributed in the room. In these cases, not only room temperature must be controlled, but also the other various steps must be controlled in various manner in

order to arrive at the objective.

There is no set rule in regard to the amount of controls to use on a system. It should be the aim to provide the amount that is necessary, and this depends entirely on the type of system and what it is to accomplish.

There are three types of automatic controls which are used:

1. Pneumatic.
2. Electric.
3. Self-contained.

Pneumatic controls are controls operated by compressed air, usually

at low pressure up to 15 p.s.i.

Electric controls are controls operated by electricity at the following voltages: 20 volts, 110 volts, or 220 volts.

Self-contained type controls are chiefly valves in which the source of operation is the pressure of a volatile liquid enclosed in the thermal system of the valve. This pressure increases or decreases in direct proportion to variation in temperatures of what is being controlled. These temperature changes are transmitted to the volatile liquid which in turn varies the pressure to the control valve.

In this chapter electric controls will be used to illustrate the types of controls for various types of systems. It should be kept in mind that there are pneumatic controls which will satisfy the same purpose.

It is an advantage to use electric controls on small systems, especially if compressed air up to 15 p.s.i. is not available. On large systems electric or pneumatic type can be used to the same advantage.

TYPES OF CONTROL EQUIPMENT

The following is the various control equipment which is generally used:

1. Thermostats (see Figs. 1, 2, and 3).

- a. Room thermostat, manual setting, two-position type.
- b. Room thermostat, automatic setting, two-position type.
- c. Room thermostat, manual setting, modulating type.
- d. Room thermostat, automatic type, modulating type.

2. Temperature controllers (see Fig. 5).

- a. Manual setting, two-position type.
- b. Automatic setting, two-position type.
- c. Manual setting, modulating type.
- d. Automatic setting, modulating type.

3. Humidistats.

- a. Room humidistat, manual setting, two-position type (see Fig. 4).
- b. Room humidistat, automatic setting, two-position type.
- c. Room humidistat, manual setting, modulating type.
- d. Room humidistat, automatic setting, modulating type.

4. Humidity controllers.

- a. Manual setting, two-position type.
- b. Automatic setting, two-position type.
- c. Manual setting, modulating type.
- d. Automatic setting, modulating type.

5. Electric motors (see Fig. 6).

- a. Two-position type.
- b. Modulating type.
- c. Floating type.
6. Step controllers (see Fig. 8).
- a. Two-position type.
- b. Modulating type.
7. Relays (see Fig. 14).
8. Automatic steam valves (see Figs. 9 and 10).

- a. Two-position type.
- b. Modulating type.
9. Automatic water valves.
- a. Two-position type.
- b. Modulating type.
- c. Modulating mixing type.
10. Louver dampers (see Fig. 13).
11. Solenoid valves (see Figs. 11 and 15).
- a. Two-position type.

DESCRIPTION OF CONTROL EQUIPMENT

When applying the two-position type controls, both the instrument controlling and also the instrument being controlled must be of the two-position type. The same holds true with the modulating type of controls.

A brief description of operation of the above control equipment follows: Room thermostats are sensitive reacting to air temperature within the room.

Temperature controllers react to temperature changes and are intended for regulation of duct temperature, tank temperature, coil temperature, and for measurement of outdoor air.

Room humidistats are sensitive devices reacting to moisture content or humidity changes in the room.

Humidity controllers react to humidity changes and are intended for regulation of humidity in ducts.

Electric motors are used on dampers, step controllers, and valves, and are known as power motors. The purpose of these motors is to position the outside air, recirculated air, face, by-pass, or distributing dampers, regulating the flow of air through the system or into the room. Also used to open valves, and to operate step controllers.

Step controllers consist of an elec-
(Continued on next page)

Various Room Controls Used In Air Conditioning

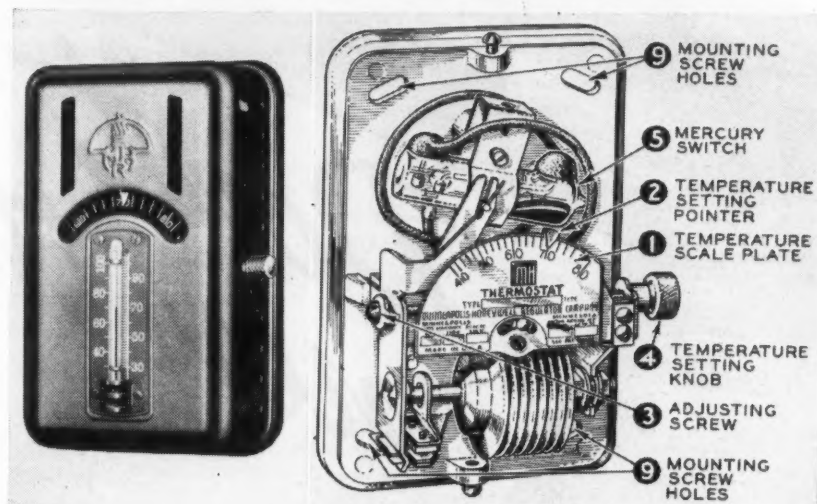


Fig. 2 is a two-position manual control room thermostat, Minneapolis-Honeywell's No. T-42-A.

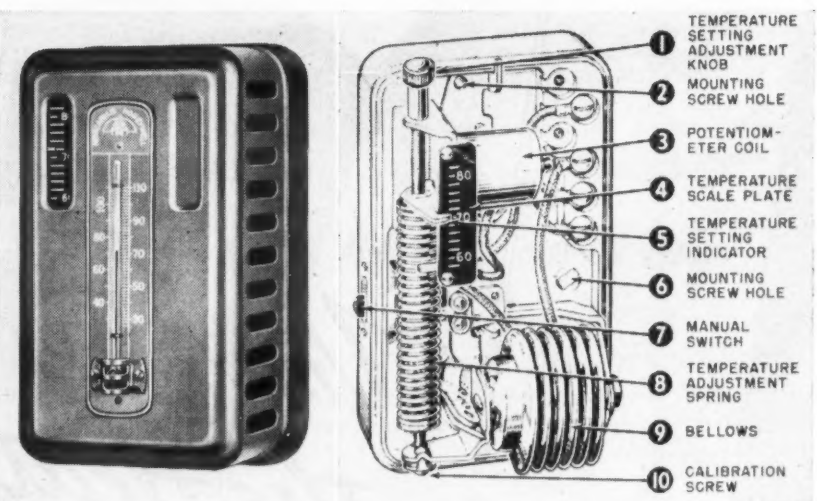


Fig. 3 represents a modulating type manual control room thermostat produced by Minneapolis-Honeywell as T-92-A.

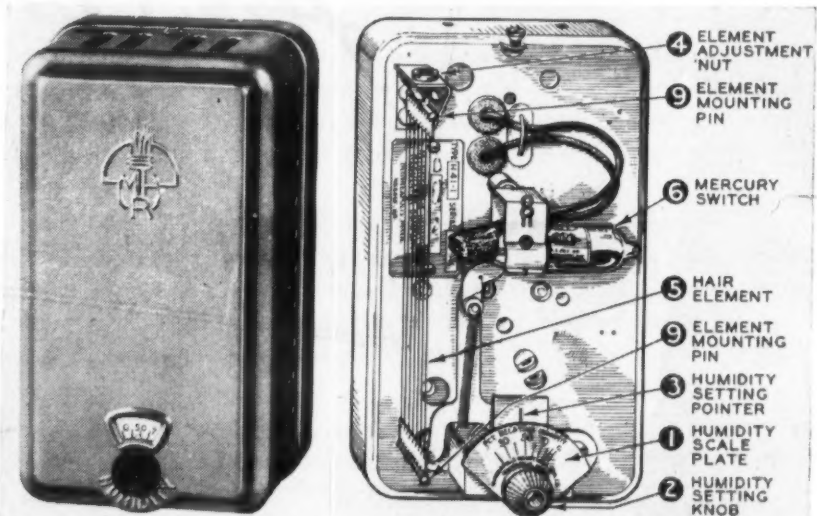


Fig. 4—This is a hair-element type room humidistat of two-position, manual control design. Made by Minneapolis-Honeywell, its model number is H-41-A.

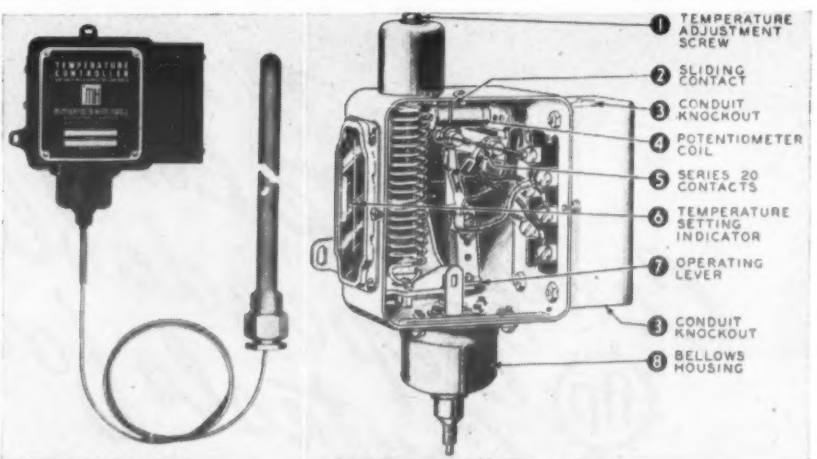


Fig. 5 shows the remote bulb and bellows arrangement as well as other internal parts of a Minneapolis-Honeywell T-915 temperature controller.

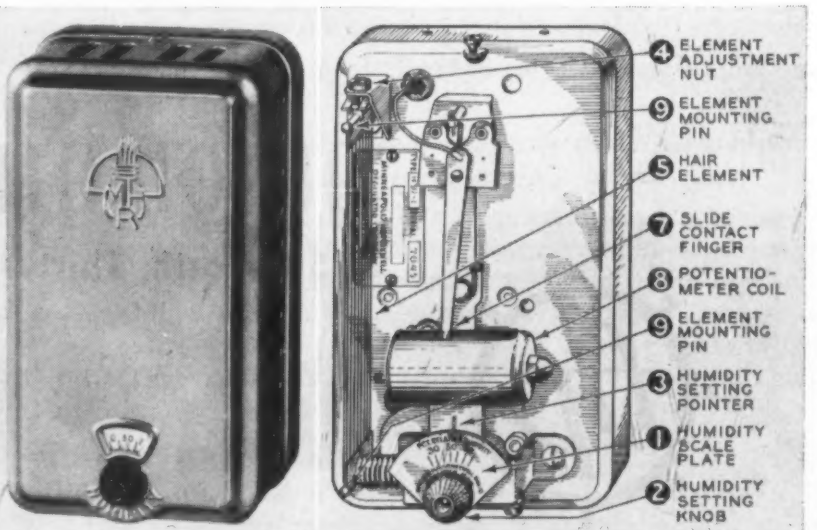


Fig. 7—This is a modulating type, manual control room humidistat employing a hair element. It is M-H's No. H-91 model.

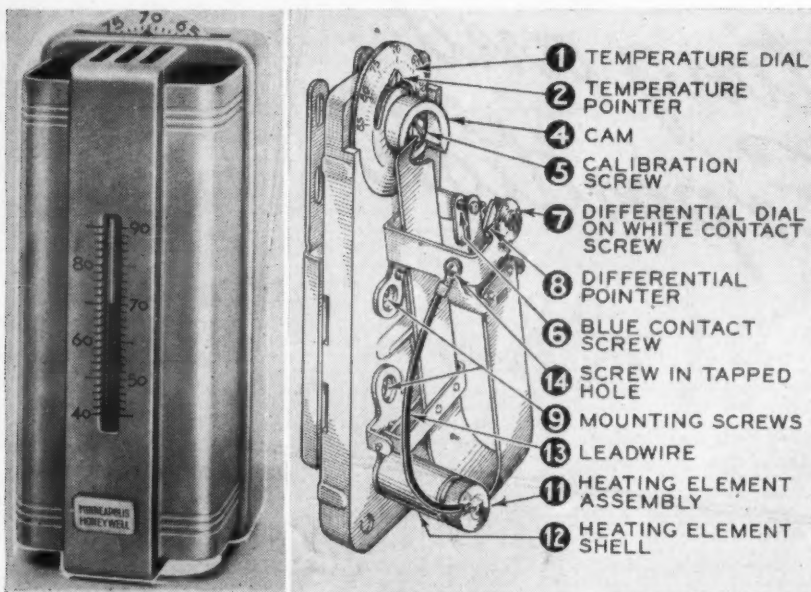


Fig. 1—Shown here are the exterior and interior views of a Minneapolis-Honeywell T-11-A two-position manual control room thermostat.

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Step Controller Handles Several Operations

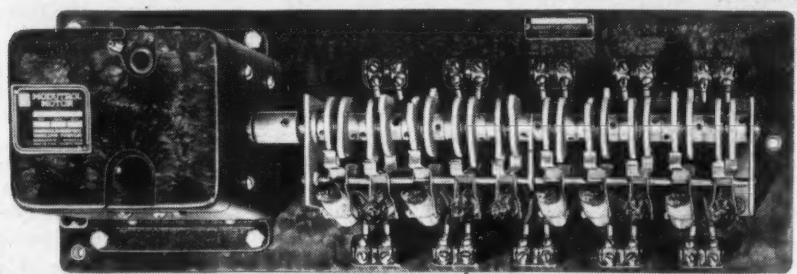


Fig. 8—Various controls in an air conditioning system can be actuated in sequence or simultaneously by this Minneapolis-Honeywell S-416-A motor-operated step controller.

Controls--

(Continued from preceding page)

tronic motor which drives a shaft. On this shaft multiple cams are set to cut in and out their respective switches to any point within the travel of the motor or about 160° rotation of the shaft. These switches may operate dampers and valves.

Relays are used to amplify the power capacity between the controlling device and the controlled device. For example, a temperature controller in order to achieve its sensitivity may be constructed in such a manner that it is not capable of handling the electric current required of a damper motor.

It is, therefore, the practice to install a relay between the two and allow the temperature controller to actuate the relay, and the relay in turn to actuate the damper motor.

Control valves to control the steam, water, or air may be adjusted by or at the command of controllers to regulate the flow of the medium passing through them, according to the needs of the system.

Such valves are usually constructed with power units linked to the valve stem in such a manner that movement of the power unit at the command of a temperature controller will react to position the valve as conditions demand.

Solenoid valves are actuated by the magnetic effect of an electric solenoid built within them. Normally these valves are opened when the solenoid is energized (see Fig. 15).

Solenoid valves are installed on the liquid refrigerant lines, providing the most convenient method of controlling the amount of refrigerant supplied to the cooling coil in accordance to the demand of the thermostat in conditioned space.

Valves, Motors, Relays Have Important Functions

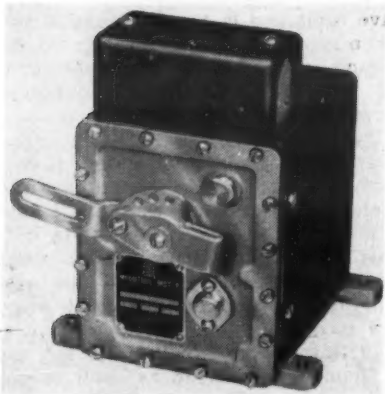


Fig. 6—This M-904-E unit is a typical M-H control motor.



Fig. 9 shows an automatic, two-position type M-H steam valve.



Fig. 10—This Minneapolis-Honeywell automatic steam valve (K-901) is of the modulating type.

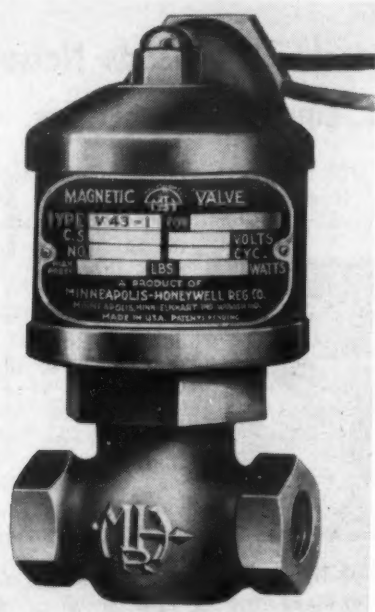


Fig. 11—A two-position type M-H solenoid water valve (V-43).



Fig. 14 shows the housing of a M-H magnetic relay (No. R-19-A).

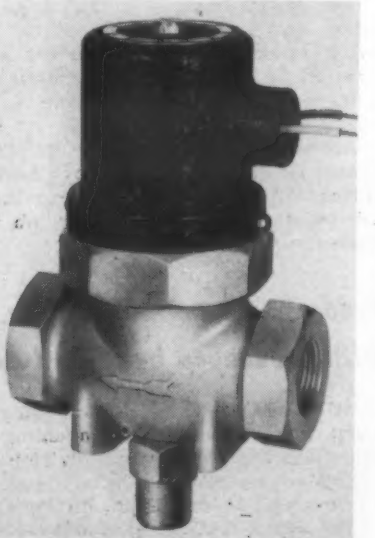


Fig. 15—This solenoid refrigerant valve is Detroit Lubricator's No. 686.

Two-position type control is also referred to as "on and off" control or as positive-acting control. For example:

- Thermostat which opens or closes a solenoid valve.
- Starting and stopping motor appliances as "on and off."
- Damper being fully closed or opened.
- Control valves being either fully opened or fully closed.

Modulating control is also designated as "gradual" or graduated acting control or "proportioning control." It is used to designate the type of system in which a control valve or damper motor modulates or proportions the flow of air, steam, or water in reacting to change of conditions at the controller.

Modulating control causes motion in the controlled device in proportion to motion caused in the controller by frictional degree variations in the medium to which the controller is responsive.

After such fractional change has been measured at the controller and translated to terms of a new position of the valve or damper, the modulating system stands by, await-

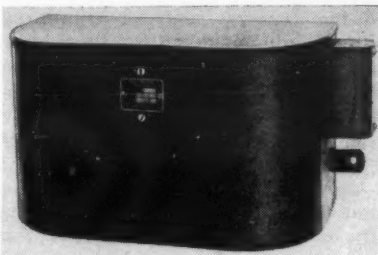
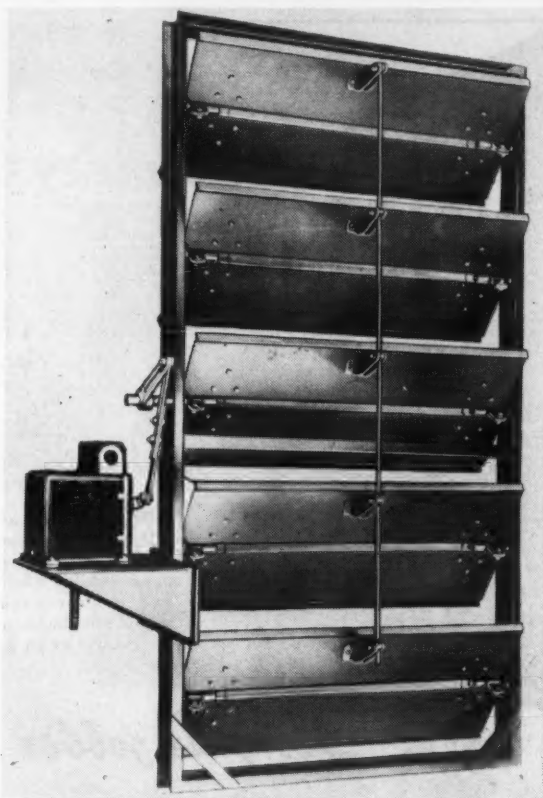


Fig. 12 illustrates a typical static pressure regulator (M-H's P-212).

Fig. 13—Operated by an M-H motor, this lower damper can be automatically positioned by other controls in an air conditioning system.



ing further change at the controller before additional motion occurs.

The extent of the motion is limited only by the limits of the controller and by the intensity of the change of conditions as measured; hence the valve or damper is repositioned as frequently as changes at the controller occur, but always in direct proportion to the amount of change.

Electric control systems utilize electricity as the primary medium

for the operation, and the basic function of these controls consists of switching or otherwise adjusting electrical circuits to govern electric motors, relays, or solenoids.

The individual unit of this type of system is interconnected by line voltage or low voltage wiring, and this wiring serves to complete the circuits carrying the commands of the controllers to the valves or motors.

(To Be Continued)

Carrier's two new lines bring you year-round sales

For a combination that provides greater sales all year round, there's no more profitable franchise than one covering both Carrier Room Air Conditioners and Carrier Food Freezers. Both lines have natural selling seasons—seasons that, between them, blanket the entire year to give you non-stop profits.

Not only that, both lines are best sellers. With Carrier Air Conditioners, you have a complete line—window and floor models—each offering the greatest capacity per dollar, smartly styled and efficient, quiet and economical in operation. With

Carrier Food Freezers, you have the last word in modern refrigeration—two big-capacity upright models of 15 and 30 cu. ft. designed to give years of satisfaction. Among their customer-pleasing features: extra-thick insulation, handy front door for easier handling, a 5-year warranty.

More and more dealers are making sure of all-year-round sales—and greater profits—by taking on both these Carrier lines. They know the value of the Carrier name, long a "buy-word" in air conditioning and refrigeration. Write for details. Carrier Corporation, Syracuse, New York.

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WHOLESALE ONLY

Good Equipment, Store Layouts Help Supermarket Men Beat Rising Costs

CORONADO BEACH, Calif.—Supermarkets will exceed their 1948 record of expansion, according to members of the Super Market Institute, at their annual mid-year meeting here recently.

Despite high building costs, supermarket operators from all parts of the country told of plans to build bigger and better markets in their drive for greater volume to offset mounting operating costs.

Gene Schear, Liberal Markets, Dayton, Ohio, told operators that his latest store includes terrazzo floors, which are more attractive to the customer, and yet saved the expense of dusting shelves and packages common to stores with concrete floors. Mirrored back walls and tile side walls, though expensive as original installations, saved considerable maintenance expense.

"With these walls," he said, "we can wash down the entire store in a day and a half and cut out the annual repainting."

Other factors, such as soundproof ceilings and modern lighting, more than paid their way in customer satisfaction and increased volume. The increasing trend to wider aisles to care for peak traffic was underscored by a number of operators.

George Friedland, president of Food Fair, Inc., who headed the session on expansion, pointed out that 1948 has seen the completion of 800 supermarkets throughout the country, even though experts believed

that building costs would not come down in five years.

The increasing difficulty of financing new markets was stressed by a number of operators. This difficulty, together with the general uncertainty that exists in the retail food industry, underscored the need for cautious expansion.

Jules Newman, Hinky-Dinky Stores, Omaha, asserted that there had been a 50% increase in the capacity to distribute food at retail, while consumption had increased but 35%. If the present expansion rate continues, good and bad operators will suffer by losing business.

Summing up, operators expressed their belief that:

1. Expansion is still a vital part of the development program of supermarkets in their efforts to build gross volume.
2. Building costs are still extraordinarily high, but there are signs that such costs are being stabilized.
3. Equipment costs are currently running around 60% of the cost of new markets.
4. Financing is becoming more difficult and more expensive.
5. Dollar for dollar, supermarkets are better systems for the economical distribution of food than ever before.
6. Supermarket operators are still courageously pushing ahead in their expansion programs, despite decreasing profit margins.

New Board of Trade Set Up By Trio In Austin, Texas Area

AUSTIN, Tex.—Records in the Office of the Secretary of State here show the recent incorporation of the Texas Appliance and Air Conditioning Association in Dallas as a board of trade by Raymond H. Dear, Frank G. Atwater, and E. B. Baird with no capital stock.

Rosebrough Heads Nelson St. Louis Branch Office

MOLINE, Ill.—Appointment of John D. Rosebrough as manager of the Herman Nelson Corp.'s branch office in St. Louis has been announced by the company.

Rosebrough will handle sales of unit heaters, unit ventilators, propeller fans, and unit blowers. During the past 10 years, he has worked as a sales engineer with special experience in the introduction and marketing of new products, according to the company.

The St. Louis office, formerly at 231 Vanol building, is now located at 2188 Railway Exchange building, the company said.

Air Cooling Planned For 2 Firms, 1 Club In Kansas City, Mo.

KANSAS CITY, Mo.—Air conditioning installations are scheduled for a new downtown club, a women's wear shop in North Kansas City, and the office of a manufacturing concern this winter.

The River Club, a recently-incorporated group of businessmen, is building a clubhouse on W. Eighth St. Occupying the 100-ft. frontage on Jefferson St., a "Missouri River" Georgian style story-and-a-half structure, including a lounge and dining room, completely air conditioned, will be built.

The Model shop, a ladies' apparel store in North Kansas City, is being opened at Armour road and Erie St. Air conditioning equipment will be installed in both the sales rooms and office.

An additional 7,000 sq. ft. of office space is being acquired by Accessories Mfg. Co. in the Kellogg-Baxter building. The remodeling job includes air conditioning.

Fedders-Quigan Heating Div. Office Managed by R. H. Kelley

BUFFALO—The Fedders-Quigan Corp. has announced the opening of an office for its heating division in the Madison Terminal building at Clinton and Madison Sts. in Chicago. The office will be headed by Raymond H. Kelley and all products of the firm's heating division will be handled.

Vaughan Electric To Handle Typhoon Line

BROOKLYN—Vaughan Electric Service, Inc., of Los Angeles, has been appointed distributor for Typhoon air conditioning units and equipment in the Los Angeles and central California area, it is announced by James Dailey, president of the Typhoon Air Conditioning Co., Inc., here.

Long established as electrical contractors, the Vaughan firm has set up a complete division to merchandise air conditioning, water coolers, and refrigeration appliances.

Jack Farnum of San Diego is regional sales director for Typhoon in California.

Air Conditioning Cited As Big Factor In Growth Of Southern Industries

ATLANTA—Officials of Carrier Corp., who were in Atlanta recently studying ways and means of increasing the number of air conditioning installations in the southeast, said the South has opened its doors to hundreds of new industries in recent years by eliminating the climate factor indoors.

"The textile industry would never have come South to the great extent it has if the indoor climate situation had not been remedied," O. W. Bynum, general sales manager of Carrier, declared.

"Many textile operators would have remained in the East and North for personal reasons, but air conditioning gave them a way to control the uncomfortable warm and humid summer days."

Bynum went on to say that "Carrier is expecting a great deal from its southern distributors and dealers in the coming years. Air conditioning is almost essential in this area if for competitive reasons only. Formerly a store installed the system just for comfort, but that stage has passed."

Installation of small units for use in homes, small offices, and stores was emphasized at the sales meetings. It was pointed out that a unit small enough to condition the air in one room can now be purchased for \$399.50.

Twelve top officials from Carrier's home office in Syracuse attended the meetings. The Carrier Atlanta Corp. is headed by C. L. Templin as manager, while G. C. Robertson is the corporation's Atlanta district dealers' manager.

John Curtis Placed In Charge Of Gemco Southeast Region

ST. LOUIS—General Engineering & Mfg. Co. here has appointed John H. Curtis as regional manager of its southeast region, with headquarters in Augusta, Ga. Curtis was formerly regional sales representative in Gemco's south central territory.

Curtis, an engineering graduate of Columbia university, was previously vice president of Heartland Trading Co., New Orleans export concern, and an associate director of the International Trade Mart.

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Northern Brazil's Markets Sparse Now But Watch Future Development Closely--Analyst

By Eugene Hes, International Market Analyst

"There is no country in the world where people can produce for themselves so many of the necessities and luxuries of life. Indian corn, rice, mandioca, sugar, coffee, cotton, beef, poultry, and pork, with oranges, bananas, and abundance of other fruits and vegetables, thrive with care.

"With these articles in abundance, a house of wood, calabashes, cups, and pottery of the country, they may live in plenty without a single exotic production.

"And then what advantages there are in a country where there is no stoppage of agricultural operations during the winter, but where crops may be had, and poultry be reared, all the year-round; where the least possible clothing is the most comfortable, and where a hundred little necessities of a cold region are altogether superfluous.

"With regard to the climate I have said enough already; and I repeat, that a man can work as well here as in the hot summer months in England, and that if he will only work three hours in the morning and three in the evening, he will produce more of the necessities and comforts of life than by 12 hours daily labor at home."

These remarks are from the pen of Alfred R. Wallace, who traveled on the Amazonas in 1853. They are true today.

The north of Brazil makes up 40% of the nation's territory, but contains less than 10% of its population. This population is concentrated on the coast near Sao Luiz in the state of Maranhao and Belem in the state of Para.

At present, the exploitative character of Brazilian economy is carried to an extreme in the north. Here is the tangible result of man collecting the fruit without planting the tree.

The great logical test came to this virginal region when Ford started Fordlandia, with the best intentions and a broad outlook of fine future

planning. Apparently the great experiment has failed. Ford has given to the Brazilian Government for practically nothing his cultivations for which he had spent untold millions of dollars.

What was the real and basic reason of this failure? According to the opinion of a Brazilian scientist, Fernando Segadas-Vianna, the real reason was a sin of omission. Ford has failed to make systematic research to find rubber trees immune to tropical plant disease for the plantation.

How does this picture fit in with the outlook for the products of our industry? At present, our sales of commercial and other refrigeration equipment in those regions are only a few per cent of our total sales in Brazil.

Of course, these sales are concentrated in the above named coastal settlements. Some equipment has been sold in Manaus, the one and only great city within the vast expanses of the Amazonas basin.

But the future should be watched closely. The Brazilian Government is studying intensely the possibilities of the development of this enormous region. It is certainly not impossible that ways and means will be found to further this development, even before the great new settlements planned along the Sao Francisco river in eastern central Brazil take shape.

The excellent air connections in Brazil are today already connecting Manaus, Belem, and Sao Luiz with the rest of South America. Manaus has today about 96,000 inhabitants, Belem over 200,000, and Sao Luiz over 90,000.

The American manufacturer might do well not to neglect this potential market. Despite the good air connections, the coverage of this wide field appears impossible from the great capitals of the south of Brazil, or even from the larger cities in the northeastern region like Pernambuco. Belem seems to be the strategic point from which to serve the momentarily

sparse markets of this part of the country.

We dealt with the total aspect of the Brazilian economy in the introduction of this series. It has been demonstrated that the Brazilian economy resembles, alas, in one great respect, the American economy: Man has mistreated the soil.

If cities of the million size are able to grow and bloom on the fringes of such an economy, the proof is given that despite the human faults in exploitation, the riches on and under the soil must be tremendous. Modern science has been used to prove this in that great country in Latin America. Moreover, the Brazilian Government is making systematic and energetic efforts to stop soil erosion and exploitation.

Bendix Washers Will Be Produced by French Firm

SOUTH BEND, Ind.—Licensing by Bendix Home Appliances, Inc., of another European company, Bendix Home Appliances France, S. A. R. L., to manufacture and distribute washers in France and in the French possessions has been announced by Harlow K. Lyons, director of the foreign division of the American company.

Located in a suburb of Paris, the French firm's plant is now being tooled. It will have a productive capacity ranging from an annual minimum of 8,000 units to a maximum of 20,000.

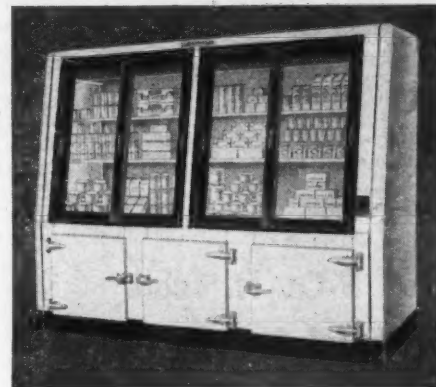
The other European company licensed to make and distribute such home laundry equipment is Bendix Home Appliances, Ltd., of England.

Pinnacle

DAIRY • BEVERAGE • VEGETABLE
Refrigerators

FEATURES

- Frame constructed of dry No. 1 lumber securely fastened together with screws.
- Insulated with verminproof Fiberglas insulation.
- Entire cabinet covered with waterproof paper.
- Exterior top, back and bottom covered with aluminum or other rust resistant metal.
- Front and ends finished in two-coat gleaming white porcelain.



Quality Construction Throughout!

Interior finished in porcelain and Stainless Steel. Exceptionally large doors that slide easily at the touch of your fingers. Extra storage compartment at bottom. Fluorescent lights in display section.

A few exclusive Pinnacle territory franchises are still available. Write or wire immediately for full information.

FREE FOLDERS of complete line.

Pinnacle
EQUIPMENT CORPORATION
FLEETWOOD, PENNSYLVANIA

Export Dept.: 39 Broadway, New York



America's Choice

CHEVROLET ADVANCE-DESIGN TRUCKS for All-Around Value!

Ask the experts—

If you ask the drivers, they'll say:

"Chevrolet Advance-Design Trucks can and will take it day after day, month after month. They're easy to handle . . . built with driver safety and comfort in mind."

The mechanics insist:

"Chevrolet trucks last longer because they're designed, engineered and built for the job. They're easier to work on . . . built with an eye to economical maintenance."

The owners will tell you:

"Only Chevrolet has the TRIPLE ECONOMY of low cost operation . . . low cost upkeep . . . and the lowest prices in the entire truck field."

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICHIGAN

Only the Leader—Chevrolet has all these features:

NEW CHEVROLET 4-SPEED SYNCHRO-MESH TRUCK TRANSMISSION

A special feature in one-ton and heavier duty models that assures new operating ease and efficiency.

THE CAB THAT "BREATHES"

Here are the trucks with the famous cab that "breathes"! Outside air is drawn in and used air is forced out! Heated in cold weather.*

FLEXI-MOUNTED CAB

Chevrolet's Advance-Design Cab is mounted on rubber, cushioned against road shocks, torsion and vibration.

IMPROVED VALVE-IN-HEAD ENGINE

The world's most economical engine for its size now has greater durability and operating efficiency.

SPLINED REAR AXLE HUB CONNECTION

Greater strength and durability in heavy-duty models with this exclusive Advance-Design feature.

PLUS Uniweld, all-steel cab construction

• New, heavier springs
• Full-floating hypoid rear axles on ¾-ton and heavier duty models
• All-round visibility with rear corner windows*
• Specially designed brakes
• Hydrovac power brakes on two-ton models
• Ball-bearing steering
• Double-line pre-selective power shift in 2-speed axle at extra cost on two-ton models
• Wide base wheels
• Standard cab-to-axle-length dimensions
• Multiple color options.

*Heating and ventilating system and rear corner windows with de luxe equipment optional at extra cost.

ACCURATE...
RUGGED...
COMPACT...

Bulletin 836 PRESSURE SWITCH

Available for pressures between 30-in. vacuum and 500 lb sq in. Metal bellows operate a reliable snap action precision switch, which has no levers, hinges, or pivots. Range and differential can be easily adjusted in the field. Also, see the Bulletin 837 Temperature Control. Write for full information. Allen-Bradley Co., 1313 S. First St., Milwaukee 4, Wis.

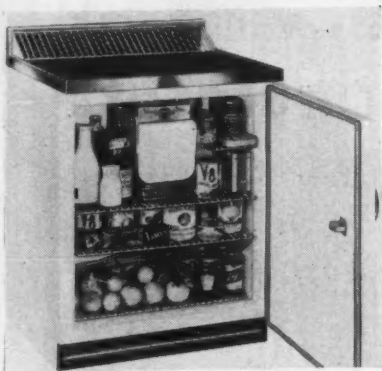


ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

CHOOSE CHEVROLET TRUCKS FOR TRANSPORTATION UNLIMITED



What's New



'Glasco' 5-Cu. Ft. Table Top Model Announced

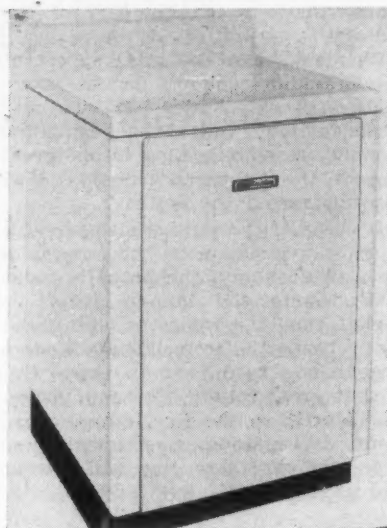
CHICAGO—A new table-top refrigerator with 5 cu. ft. net capacity is announced by J. H. Rasmussen, head of the national sales company bearing his name. Recommended retail price is \$199.95.

The unit will be displayed for the first time at the home furnishings market here in January. Rasmussen showrooms are located on the 14th floor of the Merchandise Mart in Chicago.

The new unit is a product of the Glascock Bros. Mfg. Co., Muncie, Ind., producer of mechanical refrigeration equipment for more than 20 years. This product, however, is its first to be designed and built for retail distribution. Glascock has been manufacturing commercial refrigeration equipment for Norge, Kelvinator, Crosley, General Electric, Frigidaire, and Coca Cola.

Carrying the name "Glasco," the table-top refrigerator will reach the market nationally through the offices of Rasmussen. He is now in the process of appointing distributors who will handle sales activities to both retailer and building contractors.

The unit has a width of 27 in. and is 24½ in. deep. Without legs or without separate top, the Glasco stands 34½ in. high. Legs of standard 1½-in. top bring the height to the standard kitchen appliance measure-



Kelvinator table-top water heater

ment of 36 in. Tops for the unit are available in linoleum, Formica, or stainless steel.

The Glasco contains a Tecumseh hermetic unit, and the cabinet is of welded steel construction, Bonderized, and with two coats of high temperature baked enamel. Other construction features include fibre glass insulation and adjustable gliders at the base for leveling.

Kelvinator Introduces 1949 Water Heater Line

DETROIT—Kelvinator Div. of Nash-Kelvinator Corp. has introduced a "completely restyled and diversified line" of electric water heaters for 1949.

The water heaters are manufactured in a round style for normal basement installation; and table-top style for location in kitchens and utility rooms. The round model is manufactured in seven sizes, with capacities of 12, 20, 30, 40, 52, 66, and 82 U. S. gallons. The table-top model comes in 30 and 40-gal. sizes.

Single or double immersion-type heating elements, and a sacrificial-type anti-corrosion magnesium alloy rod are optional equipment on both round and table-top models.

Features uniform throughout the line are heavy steel tank construction and a white, high-gloss baked enamel finish on a steel jacket. Tanks are automatically welded and uniformly hot-dip galvanized, and designed for a working pressure of 150 p.s.i.

The heating elements are made of nickel-chromium imbedded in magnesium oxide and sealed in a seamless copper tube. The element projects horizontally, directly into the water.

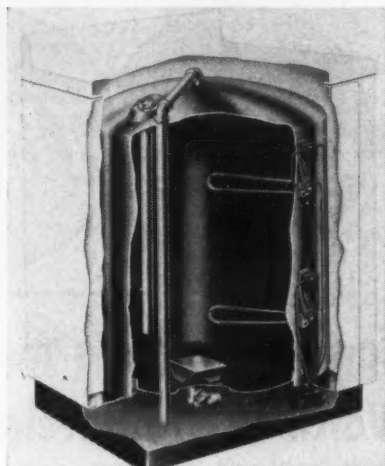
There is a thick blanket of Fiberglas insulation around the tank.

A separate sensitive temperature control for each heating element is said to start the current flowing promptly as soon as water drops below the required temperature and shut off all current as soon as the proper temperature is reached. A fingertip control dial on the head of the thermostat is intended to permit accurate regulation.

A baffle is placed over the cold water inlet to diffuse incoming water, making it possible to draw virtually all the hot water from the tank without mixing with cold water, according to Kelvinator.

Models equipped with the magnesium alloy rod are designed for use in areas where the water exerts a highly corrosive action on the galvanized interior of hot water storage tanks. An electro-chemical action takes place between the magnesium alloy and the zinc-lined tank, slowly dissipating the rod and forming an anti-corrosive film over the zinc.

There is a 10-year warranty on all heaters equipped with the magnesium rod, and a standard one-year warranty on those without the rod.



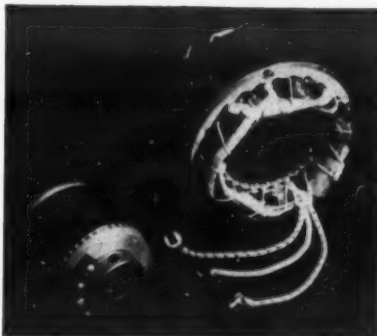
Cutaway view of Kelvinator table-top water heater

tin, steel, micarta, Lucite, Fiberglass, wool, and stainless steel is said to be satisfactory at all temperatures between -65° F. and 500° F. It will meet aircraft standards for low temperature flexibility, and for vibration resistance throughout its entire operating range, according to the company.

"Stabond C-875 is initially of a plastic nature and its consistency may be varied for application by trowel, brush, or extrusion gun," the firm explained.

"It may be used as an abrasion-resistant coating for electrical systems, as a gasket sealing material, and for applications throughout air conditioning systems where materials must withstand high temperatures without contaminating air, with a correspondingly low moisture absorption factor."

Small Diameter Motor Fits Limited Space Job



SCHENECTADY, N. Y.—A new small-diameter motor designed to drive hermetically sealed refrigeration compressors has been announced by General Electric's fractional horsepower motor division.

With a diameter of 4.790-4.792 in., it is available in ratings up to ¼ hp., 1,725 r.p.m., 115 volts, 60 cycles. The motor can be furnished with a rotor having a counterbored quill or with punchings made to fit directly over the shaft.

Compactly designed, the new motor was developed to aid compressor manufacturers in adjusting the size of their units to fit refrigerator space limitations.

Heat Resistant Sealing Compound Binds Metals

LOS ANGELES—A new heat-resisting sealing compound, Stabond C-875, has been added by the American Latex Products Corp. to its line of Stabond cements and adhesives.

Stabond C-875 is described as a resin based material, suitable for filleting or caulking, which retains its adhesive and sealing properties at temperatures as high as 500° F.

Its adhesion to aluminum, brass,



Ranco Inc.
COLUMBUS 1, OHIO



World's Largest Manufacturers of REFRIGERATION CONTROLS

Ranco Controls are found on more original water cooler installations than any other control made. Servicemen rely on Ranco Controls, too, for the dependably accurate, trouble-free service that eliminates expensive call-backs and increases their profits on every replacement job. Let your Ranco wholesaler show you why.

ANOTHER Ranco "FIRST"

Maximum sensitivity and positive action that provide temperature accuracy within new low limits—that's the story behind Ranco's new beryllium copper power element, another Ranco "first," now found in every Ranco Control.

TO THE TRADE!

THOUGH the Super-Cold Corporation is over a quarter-century old and has pioneered major improvements in commercial refrigeration, which are now considered standard throughout the industry, **WE ARE YOUTHFUL IN OUR OUTLOOK** and **WE'RE GOING PLACES!** A part of our idea "in going places" has resulted in the most liberal franchise we have ever offered. We believe it is a great opportunity for responsible experienced distributors.

Why not write NOW for complete details about a **SUPER-COLD** Franchise. Just mail the convenient coupon below.

THE SUPER-COLD CORP.

General Offices: 1020 E. 59th St., Los Angeles 54, California
NEW YORK - NEWARK - PHILADELPHIA - HOUSTON - CHICAGO - PORTLAND
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NOTE: Inquiries from out of U.S.A. should be addressed to: International Division, or use Cable Address, "Supercold."

The Super-Cold Corporation
1020 E. 59th St., Los Angeles 54, Calif.
Gentlemen:
Please furnish me with details on your new Super-Cold franchise.

Name _____
Address _____
City _____ State _____

GUARDIAN OF
Flavor
Appearance
Purity

SUPER-COLD
Refrigeration

COMPLETE FOOD STORE REFRIGERATION UNDER ONE GREAT NAME

1st in Performance

LEWIS Centrifugal PUMPS

serve industry for capacities up to 500 G.P.M. at medium heads...1½" to 3" pumps in standard or custom built designs.

CHAS S. LEWIS & CO., INC.
Manufacturers
22nd and Pine Sts., St. Louis 3, Mo.

Showmanship, Service Build \$50,000 Volume For Dealership Located In Remodeled Barn

MINNEAPOLIS—Operating a dealership from a reconditioned barn which now houses a salesroom, warehouse, and repair shop near suburban Hopkins, Minn., is paying off in high volume business for Stone's Appliance and Refrigerator Service.

Starting with a \$200 shoestring about four years ago, Horace Stone parlayed exceptional service to a large group of high-income residents with such showmanlike sales methods as auctioning off traded-in appliances to attain a 1948 business volume of more than \$50,000 in service and refrigeration sales.

A native of Minneapolis, Stone had worked for many years for Central States Power Co. in Iowa. When that firm was sold to Interstate Power and Light in 1944, he moved back to Minneapolis to enter the appliance business for himself.

After a brief search for a suitable site, he found just what he wanted—a three-acre farmstead near Lake Minnetonka and located just off a major highway.

The Lake Minnetonka area is about 15 miles from Minneapolis and populated by above average income residents and wealthy business executives from the city. The latter either have summer homes or live there all year-round.

Stone set up his business in July 1945 and operated it alone until 1947. He now employs three servicemen, while his wife serves as bookkeeper, answers the phone, and acts as general "handyman."

It wasn't long before Stone established a name for himself and people began referring to his shop as "the place in the barn."

Stone displays the Amana, Norge, and Wilson lines of refrigerators and freezers in his 16 by 32-ft. showroom. The room, decorated with knotty pine walls, features a 16-ft. by 6-ft. 6-in. picture window. The window, visible from the highway, provokes immediate attention from motorists passing by, according to Stone.

The 480-sq. ft. service shop is located in the basement and includes a 12 by 16-ft. spray room. Here his servicemen repair, rebuild, or refinish units taken in trade or brought in for servicing.

Service plays an important part in Stone's business. He believes that a good share of his refrigerator and freezer sales have developed from his policy of operating as a "doctor" of refrigeration—being on call 24 hours a day. He knows customers appreciate this type of on-the-spot service.

A lot of his calls are made at



View of Stone's Appliance & Refrigerator Service. Owner Horace Stone is shown at the extreme right.

night and on weekends when customers in need of emergency service find he is the only refrigeration man available. He keeps someone, usually Mrs. Stone, on the phone at all times.

As a result when his customers are in the market for new refrigeration they are inclined to call on "the man in the barn" instead of a city firm that cannot provide as prompt repair service, Stone asserted.

Making a large number of service calls, Stone has many opportunities to convince prospects that they need a new freezer, refrigerator, or other appliance. And he offers a reasonable trade-in allowance.

Stone does a sizable business on trade-ins and has developed an unusual merchandising stunt for disposing of them after they have been repaired or rebuilt and refinished.

Stone hit upon the idea of holding an auction two or three times annually. Located in a rural setting, he figured that if farmers dispose of cattle and farm equipment in this manner, a similar technique could be applied to appliances.

He held his first auction just after Thanksgiving this year and was very pleased at the result.

This is how he conducted it: He heralded the affair through direct mail and local newspaper advertising in the style of a cattle auction. He got the local bank to act as clerk and he hired an auctioneer.

On auction day, Stone wheeled the appliances, which included some imperfections as well as traded-in units, out on a side loading dock. A crowd of more than 150 persons gathered around.

The appliances were sold by lot

number and the bidders could express their desires in advance on the lots that interested them.

Stone disposed, in this manner, of 22 refrigerators, freezers, ranges, washing machines, and water heaters out of 40 put on the block. All merchandise was guaranteed for from 90 days up to four years.

Oddly enough, the low priced appliances went for too much, Stone re-

ported, and the high priced merchandise went too low. Nevertheless, he found this auction a successful way of unloading a heavy inventory of trade-ins.

One service that has added greatly to Stone's reputation in this area is his policy of loaning refrigerators and freezers to customers while he is making lengthy repairs on their units. He finds that this costs him very little as his own pick-up truck delivers the replacement unit when it picks up the one to be repaired.

When emergency repairs are made on freezers, Stone will often store the customer's food in a large 30-cu. ft. freezer maintained in his shop for just such emergencies. Customers appreciate this sort of favor, he finds. He prides himself that he has never lost a pound of frozen food through breakdowns.

Stone also loans equipment to church organizations and fairs as a goodwill measure. A local church recently held a bazaar and he provided a large ice cream cabinet for the occasion.

At a recent county fair Stone set up a home freezer demonstration booth and his wife demonstrated food packaging methods and freezer operation.

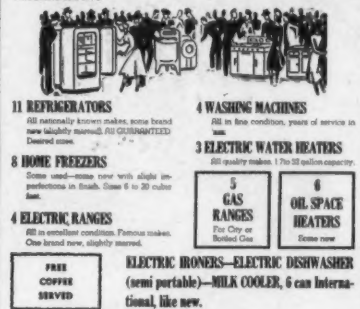
Stone's sales territory stretches over a radius of 20 miles from his shop through suburban, resort, and some farm districts.

As his customer list reads like a roster of Minneapolis millionaires, Stone does a majority of his freezer business in the larger upright sizes. His customers do a lot of entertaining and require adequate storage space.

A typical installation is one made by Stone at the home of R. D. Onan,

First Annual Pre-Holiday HOME APPLIANCE AUCTION

Never before an event like this. MORE THAN 40 MAJOR HOME APPLIANCES. Refrigerators, Electric and Gas Ranges, Freezers, Washers and many others (all trading on new Norge appliances). Every one recommended by experts in years of satisfactory service. LIBERAL GUARANTEE. This sale is our way of giving you the advantage of our low overhead. Merchandise can be inspected any time before sale time.



SATURDAY, NOV. 27
STARTING AT 1 P.M.
Sole conducted by Stone's Appliance & Refrigerator Service, Inc.
See Hugs before you buy—See Stone before you trade
Stone's Appliance & Refrigerator Service, Inc.
Hugobon National Bank of Hopkins, Minn. Tony Harris, Auctioneer

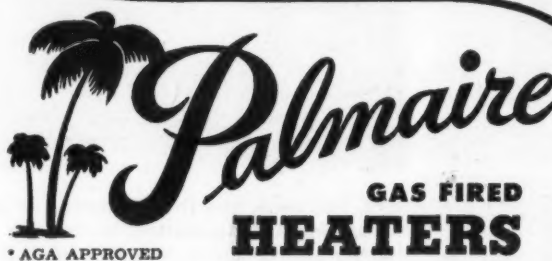
Advertisement of Auction

prominent Twin City industrialist. Onan had a 60-cu. ft. Wilson reach-in freezer which was installed in his garage.

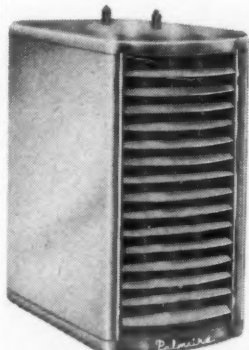
The two condensing units powering the reach-in were camouflaged by Stone who racked them one on top of the other and hid them inside a shroud.

The two units are hooked up so that each operates half of the reach-in box. Flush thermometers for the two sections of the freezer unit and a warning pilot light were installed on the cabinet.

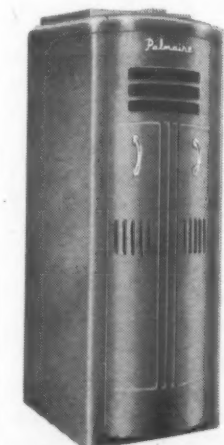
YEAR ROUND BUSINESS A PROFITABLE PLEASURE WHEN YOU SELL



GAS FIRED HEATERS



SUSPENDED UNIT HEATER 80,000 BTU AND LARGER



FORCED AIR FURNACE 85,000 BTU



PORTABLE HUMIDIFIER FOR HOMES AND OFFICES

"BEST HEATER SALES AND PROFIT RECORD EVER"

is a common expression among Palmaire outlets. How come?

Palmaire brings a new low in selling costs - a new high in profits. It's easy to see - just check the features and you'll agree.

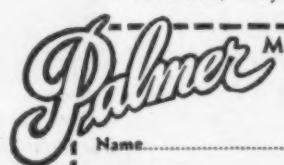
- Free-floating, heavy duty motors give silent long life operation.
- Over-size fans and blowers provide maximum heat circulation at minimum power consumption. Assure low head temperatures.
- Extra large heavy gauge heating elements engineered for silent maximum heat exchange.
- Precision formed porcelain enameled steel burners give thorough, even combustion.
- Operation and safety controls are fully automatic - absolutely foolproof.
- Space saving compactness - ultra modern styling. Finished in handsome baked enamel Hammetone.
- All Palmaire heaters must pass rigid performance tests before leaving the factory - satisfied customers assured.

HERE'S HEATING AND COOLING EQUIPMENT THAT FULFILLS THE STAR SALESMAN'S DREAM!

COMPLETE LINES for winter and summer which incorporate the most exacting specifications for homes, industrial and commercial buildings - definite models for definite needs.

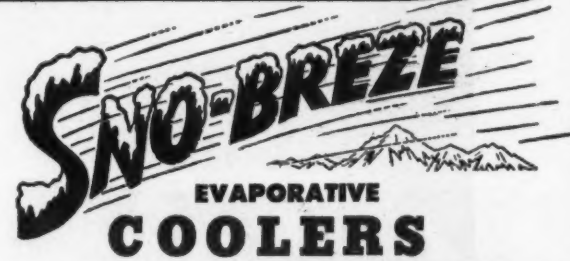
QUALITY LINES that consistently render supreme performances at minimum costs - always building prestige for your firm.

Palmaire and Sno-Breze business a pleasure? Brother, they're lines you'll really treasure!



MANUFACTURING CORP. Phoenix, Ariz. Dept. N10
We are Distributors Dealers
Please rush sales details on Palmaire heaters Sno-Breze coolers

Name _____ Address _____ City _____ Zone _____ State _____

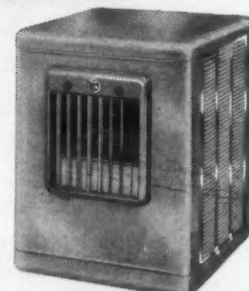


EVAPORATIVE COOLERS

AGAIN SNO-BREZE LEADS THE ENTIRE INDUSTRY!

1949 models perfected to the limit. New faces - new exclusive innovations. Compare the features - your test is best - you'll readily see why this seasons prediction is "A Sno-Breze Sales Fest."

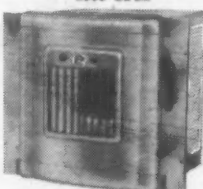
- Rubber mounted heavy duty motors give silent long life operation.
- Blower and fan assemblies cushioned on rubber pillows. No vibration noise.
- Perfectly balanced over-size blowers and fans assure maximum output.
- Patented "clog proof, rust proof, adjustable" rain drop" water distribution system gives thorough pad coverage.
- Centrally located electric terminal block type switch provides quick easy pump connection - no soldering required.
- Patented fully drawn frontal section gives cooler face ultra modern appearance, and is 10 times stronger than ordinary types. Has dash board controls.
- Extra heavy gauge absolutely rust resistant steel cabinets finished in handsome baked enamel Hammetone. Patents Pending



RESIDENTIAL MODEL 2500 TO 10,000 CFM



WINDOW FAN MODEL 1500 CFM



WINDOW BLOWER MODEL 1800 CFM



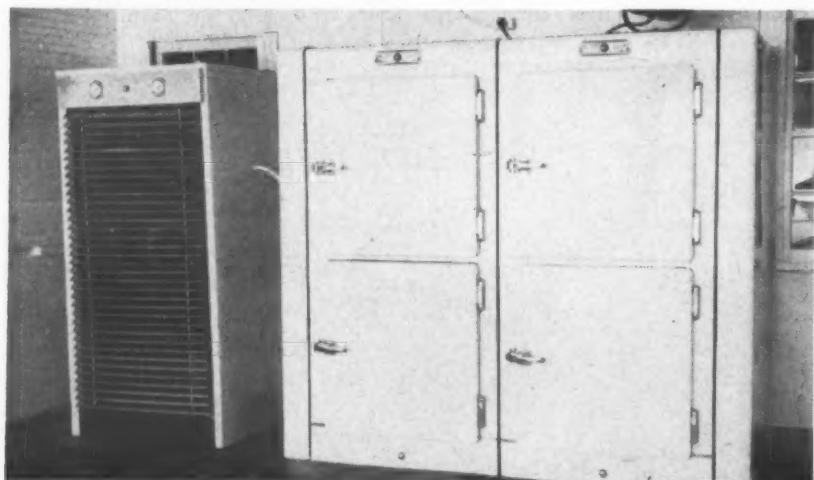
COMMERCIAL MODEL 10,000 TO 20,000 CFM



JUNIOR MODEL 1000 CFM



RECIRCULATING PUMP KIT



One of Stone's unusual installations for wealthy customer.

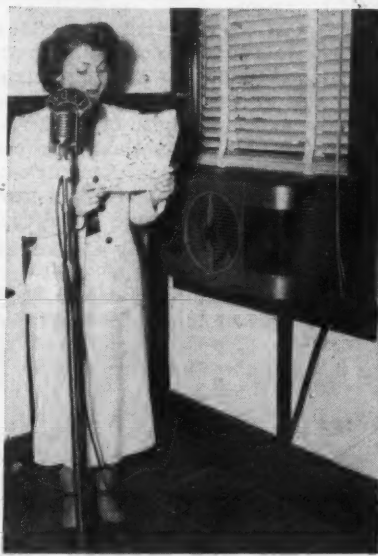


Interior of the dealership, showing upright freezers featured by Stone.

Pictures Tell the Story of a Widespread Market for Room Air Conditioners



Doctor's and dentist's offices are, of course, naturals for the room air conditioner, which in such installations provides therapeutical, psychological, and plain comfort benefits. Here a patient relaxes in comfort in the dental clinic of Dr. James J. Tome.



Radio and television broadcasting stations, by the very nature of their construction, must have air conditioning, and in certain types of stations, such as WQXI, Atlanta (with Charlotte Fortune broadcasting), the room window units have proved most suitable.

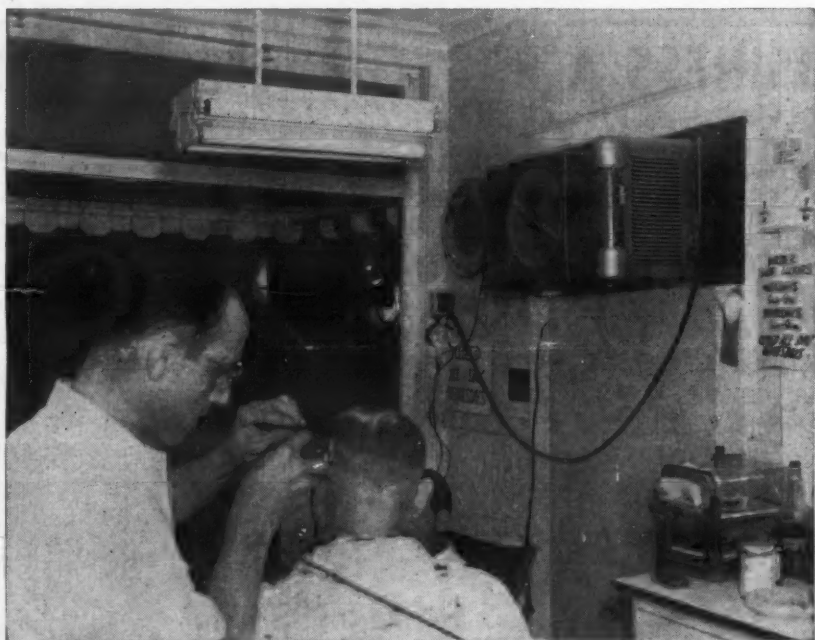


This installation in the home of a retired doctor handles a living room 18 x 24 ft., and a connecting bedroom 10 x 10 ft., the owner claims. The doctor, who is retired because of a heart condition, says that the installation brought him a large measure of relief from distresses caused by extreme heat and humidity conditions in the summer.



Installation for offices can often mean multiple sales. Pictured above is the exterior of the Hygrade Iron Works, Inc., Brooklyn, showing five Fedders room air conditioners.

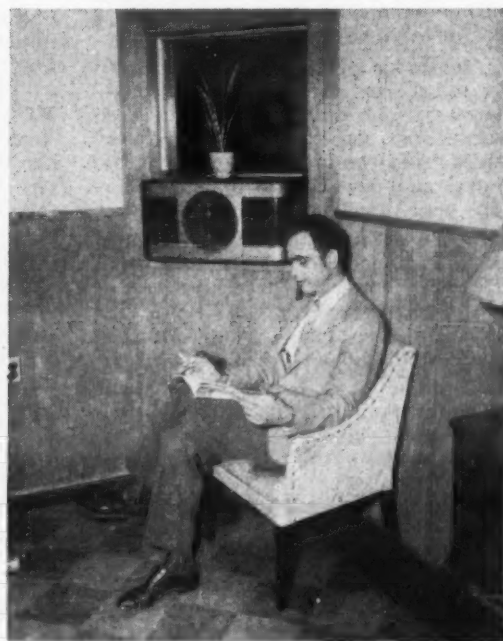
"Market—everywhere" might well be the title of this picture page of installations of Fedders room conditioners. Officials of Fedders-Quigan Corp. last year made a special effort to collect pictures of actual installations of their room air conditioners that would show not only the wide market possibilities, but also good installation practices in various types of establishments. Its experience in 1948 has encouraged Fedders-Quigan to prepare a greatly expanded promotion program to hit the 1949 market.



Installation in the Collesano Barber Shop, Lewiston, N. Y. The ceiling of this barber shop is also the roof of the building so that prior to the installation, it was practically untenable during hot summer days.



Eye, ear, nose, and throat specialists generally have quarters comprised of many small examination rooms, for which the room air conditioner is ideally suited. Here Miss De Ette Johnson, R.N., administers to a patient in the offices of Drs. J. Colvin Davis and Robert H. Rasgorshek in Omaha.



A particularly handsome installation is this one in the demonstration booth of the Buckhead Music Shop, 3134 Peachtree St., Atlanta.

Interested in AIR CONDITIONING ..HEATING or VENTILATING?

Because you are interested in these active fields, you can't afford to pass up this greatest exposition of its kind ever assembled . . . the only exposition where you can see and personally inspect the latest advances in heating, ventilating and air conditioning equipment and practices for all types of commercial and public buildings, industrial plants, institutions and homes. In no other place can contractors, distributors, consulting, design and sales engineers get so much helpful information—so many profitable ideas—in so little time.



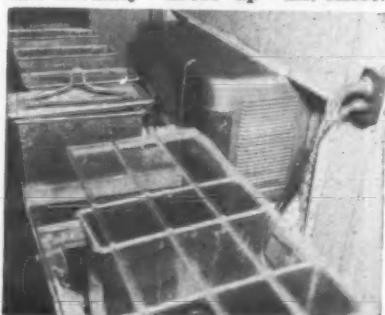
Under Auspices of American Society of Heating & Ventilating Engineers.

Don't miss this BIG opportunity . . . it will be time well used.

MANAGEMENT INTERNATIONAL EXPOSITION COMPANY



This installation in the office of H. H. Baxter, mayor of Charlotte, N. C., may be a little "fancier" than most typical office jobs, but it shows how a well-styled room unit can actually "dress up" an office.



THIS INSTALLATION IS IN Jack Benton's photographic finishing laboratory at 1523 Classen St., Oklahoma City.



Here's a "special application" job, in the sound control room of the Memphis Speech and Hearing Control Center, Memphis, Tenn.



Multiple installation in the drafting room of the Hygrade Iron Works, Inc., Brooklyn, shows how window-type room units can be used to cool a large office space.



In this installation in the office of John L. Young, managing director of the Cleveland Automobile Club, it will be noted that the windows were specifically designed to house the air conditioner so that the inside glass may be closed to conceal the unit when cooling or circulation of the air is not required.



Bedroom installation in the home of J. Sloan Hurwitz, 201 Middlesex Rd., Buffalo. Mrs. Hurwitz relates that during a heat wave, they moved their four children into the bedroom, making it a veritable barracks, but all slept comfortably.

Optimism over '49

(Concluded from Page 1, Column 5)
able to utilize the 1,000 unit daily capacity of its Connersville, Ind., plant.

"Lower prices do not seem possible, for the moment, although Admiral is not increasing its prices with the introduction in January of its 1949 lines.

"Some people in the appliance industry foresee an impending high mortality rate among the nation's appliance dealers whose numbers have tripled pre-war figures of 25,000 retail outlets. This coming year should not see much of a mortality rate among dealers of higher priced appliances, but when such a peak is reached there might be dumping, price-cutting, and chiseling, as I have seen occur during several periods in the many years I have been connected with the major appliance business.

"Many of these new appliance dealers are located in small towns or rural areas where farmers have been denied the advantages of modern conveniences all of their lives and with farm incomes at an all time high they are now taking full advantage of the opportunity to make life easier and more pleasant for themselves and their families.

"Overseas exports will probably increase this year. The dollar shortage the past few years of many of the former heavy-importing countries has channeled deliveries of most of refrigerators to just a few overseas markets thus causing a temporary glut in those markets. Import regulations of countries coming under the Marshall Plan will be more lenient with refrigerators than with many such American products such as radios, etc. Moderate quantities of refrigerators will be imported as an aid to a nation's health measures and because of the preservation of food angle."

Combination Units Are Stressed by McDaniel

Stated John F. McDaniel, manager, Refrigerator Department, Hotpoint, Inc.:

"Refrigerator merchandising in 1949 will be accompanied by extensive manufacturer-sponsored campaigns to boost sales in off-peak seasons, he said. Although refrigerators now are in good supply, there undoubtedly will be a shortage in the spring months when consumer interest in this appliance is at its height. The retailer will be supported by manufacturers through national merchandising campaigns to stimulate business in the fall.

"The most predominant trend in the refrigerator business is the ac-

ceptance of the combination refrigerator-freezer. This development has been the most outstanding innovation in household refrigeration since the war. There is a steadily increasing market for a combination of this type in which the consumer can freeze and store frozen foods at 0 degrees.

"One leading refrigerator manufacturer conducted an extensive dealer survey on the probable acceptance of a two-zone type of refrigerator. Although the survey was conducted before such a refrigerator was on the market, the majority of the dealers indicated that consumers would buy the combination type in preference to conventional refrigerators.

DEMAND UP ON COMBINATION

"When the first of the combination refrigerator-freezers reached the market early in 1948, it became apparent that demand would continue to outpace the industry's ability to produce this model. Demand for this refrigerator continued to rise during the year with the result that most manufacturers have scheduled a larger percentage of their over-all output of this model for 1949.

While the refrigerator has a saturation of approximately 75% in wired homes, the market for this appliance is being continually enlarged. Utility expansion is a significant factor in the steadily increasing market for electric appliances. It is estimated that by 1960 the country will have 10 million more electric appliance customers than today, he said, adding that between 1920 and 1960 there will have been a 669% increase in electric power consumption per customer.

"Electrification programs to transform the rich farm market into prospects for refrigerators and other electric appliances are being carried out at an unprecedented rate. There are now four million farms which have central station electric service; in other words, four out of six farms are served by electricity. New farm customers are being added to electric lines at the rate of one every 14 seconds of every working week, he said.

"Farm income is at an all-time peak; indications are that it will continue at a high level for the foreseeable future. Farmers no longer confine their refrigerator purchases to stripped models. Deluxe models of refrigerators and other new appliances are to be found in a growing number of farm kitchens throughout the country. Surveys show that many urban as well as farm families are keeping old models for an auxiliary when a new refrigerator is purchased."

'No Cutbacks' Says Ashbaugh On Westinghouse Plans

J. H. Ashbaugh, vice president in charge of the Westinghouse Electric Corp. appliance division, was quoted as saying:

"The year-end drop in major appliance sales, about which there has been a great deal of comment, appears as a seasonal decline and is recognized as part of the normal market. Few in the appliance industry had expected the tremendous market or demand for electrical appliances to hold the pace as long as it did after the war.

"It is our opinion that the coming year may see the end of allocation of home appliances. As additional evidence, our field reports show that consumer credit restrictions under Regulation W have slowed the sales of major appliances.

"Westinghouse has maintained as low a price level on its products as it could during the past year and the division sees no substantial price changes for 1949. It is sincerely hoped no new factors enter the picture in the new year that will increase the cost of appliances."

G-E's Wilson Explains 'Bulging Warehouses'

Charles E. Wilson, president of General Electric Co., at a press conference:

"Barring a fourth round of wage increases or other outside interferences, we feel certain we can approximate this year's rate of business in 1949 by stepping up our sales activities.

"Should higher labor and material costs force prices to the point where consumer buying will refuse to absorb the added cost—and we are about at that point now—the answer is likely to be cutbacks.

"Regarding reports that warehouses around the country are bulging with electrical appliances, a general shortage of commercial warehouses might well be a factor.

"We are manufacturing in a volume never before approached in many lines, and demand has generally been so heavy that normal new warehousing has not been built. Labor and materials were short, and goods were sold so fast that they did not need to be stored. Much warehousing area also has been turned into manufacturing space as that was the immediate need.

"I can foresee no basis for a recession, particularly in view of the fact that municipal and state spending offset to a degree any possible decline in business spending next year."

Goodrich Store Opens In East

NIAGARA FALLS, N. Y.—The B. F. Goodrich Co. store at 928 Main St. will be expanded and remodeled at an estimated cost of \$50,000.

NARDA Meeting--

(Concluded from Page 1, Column 4)

tributor-dealer relations, cost of doing business, small appliances, franchise improvements, service costs reduction, and builder sales.

One of the points to be emphasized at the meeting is that "salesmanship is the key to your success in 1949."

Three of the "headliners" who will offer their suggestions on this topic are Jack Lacey, of the Lacey Institute, Boston; R. M. Oliver, vice president in charge of sales, Proctor Electric Co.; and Sam Vining, merchandising counsel, Westinghouse Electric Co. Lacey will address the luncheon session Jan. 11, Oliver will take part in the panel on small appliances, and Vining will be on the panel on sales promotion.

Paul M. Williams, vice president of Commercial Credit Corp., is scheduled to address the annual dinner meeting the evening of Jan. 10. He will sketch the probable credit picture for 1949.

NARDA's board of directors will meet Jan. 12 to elect officers and draft plans for the new year.

Mfrs. Excise Payments Rise During November

WASHINGTON, D. C.—Manufacturers of refrigerators and air conditioners paid \$7,182,768 in excise taxes to the Federal government during November as compared to \$4,229,626 in the same month last year, the Bureau of Internal Revenue says.

Manufacturers of electric, gas, and oil appliances returned \$7,713,255 this November.

Jobs On Released from

CLEVELAND—Every Apex Co. employee recently laid off assured of another job, company officials indicated here recently.

The company's seven man replacement bureau, given the task of finding work in Cleveland area plants for the 300 released employees, can't keep up with job offers, an Apex spokesman asserted.

The bureau is composed of representatives of the management and of the International Association of Machinists (Ind.)

An additional 200 employees were scheduled to be released by Apex on Jan. 1.

Jack & Heintz Contracts To Sell Cleveland Plant

CLEVELAND — Jack & Heintz Precision Industries, Inc., stated recently that it has entered into a contract with White Sewing Machine Co. here, for the sale of its Berea Rd. plant, located at West 117th St. and Berea Rd., for an undisclosed amount.

This plant, comprising approximately 250,000 sq. ft. of floor space, was acquired by the predecessor company, Jack & Heintz, Inc., in April, 1945, and substantially renovated.

Since White will not take possession for some time, production by Jack & Heintz will continue at this location for the present.

Jack & Heintz stated the disposition of this property was dictated by the desire to centralize activities.

Tops the Field

The forecast is "ceilings unlimited" for dealers who handle the ULTRA-COLD line of freezers, refrigerators and ice cream cabinets. Choice territories still open in the U. S. and throughout the world. Fill out and mail the handy coupon for a dealership in your area. . . . Do it today!

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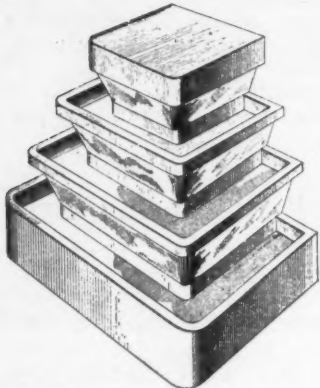
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PATENTS

Week of September 21
(Continued)

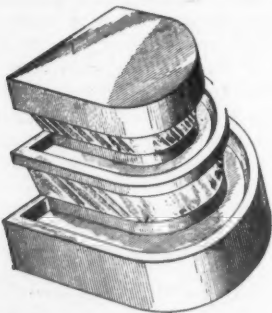
DESIGNS

151,035. DESIGN FOR A FROZEN FOOD STORAGE AND DISPLAY CABINET. Jacob W. F. Fleming, Memphis, Tenn. Application April 15, 1947, Serial No. 138,402. Term of patent 14 years. (Cl. D80-11.)



The ornamental design for a frozen food storage and display cabinet, as shown.

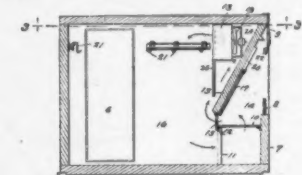
151,036. DESIGN FOR A FROZEN FOOD STORAGE AND DISPLAY CABINET. Jacob W. F. Fleming, Memphis, Tenn. Application April 15, 1947, Serial No. 138,403. Term of patent 14 years. (Cl. D80-11.)



The ornamental design for a frozen food storage and display cabinet, as shown.

Week of September 28

2,450,088. OPEN-FRONT REFRIGERATED DISPLAY CABINET. Elden O. Henderson, Oklahoma City, Okla., assignor to E. O. Henderson & Sons, Oklahoma City, Okla., a partnership. Application April 8, 1947, Serial No. 740,058. 4 Claims. (Cl. 62-89.5.)

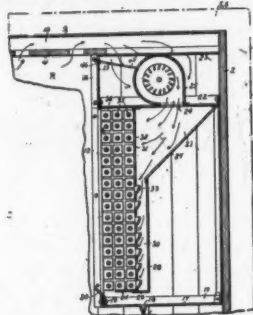


1. A refrigerating apparatus comprising a cabinet, and inwardly and downwardly inclined wall extending from the front edge of the top of the cabinet, dividing the cabinet into a storage compartment and a forward display compartment, a perforated shelf supported within the display compartment and on which articles are supported, the space below the shelf being open to induce circulation, a perforated wall connected with the inwardly and downwardly inclined wall and engaging the shelf at the rear edge thereof, a refrigerating unit mounted within the storage compartment within the space between the upper end of the inclined wall and top of the cabinet, and said refrigerating unit adapted to create a circulation of cool air through the shelf, perforated wall and storage compartment.

2,450,100. WALK-IN REFRIGERATOR COOLED BY A FORCED AIR CIRCUIT. Clinton C. Brinkoeter, San Antonio, Tex., assignor to Ed Friedrich, Inc., San Antonio, Tex., a corporation of Texas. Application August 25, 1946, Serial No. 693,523. 7 Claims. (Cl. 62-102.)

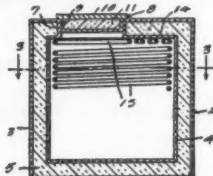
1. In a walk-in cooler having a room bounded by a top wall, side, and end walls and a floor, and having a perforated ceiling spaced from said top wall to

provide an air duct, the improvement which comprises: an air-cooling and circulating unit located in one corner of the room adjacent said ceiling and above



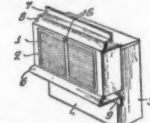
said floor, said unit including a blower and motor chamber in communication with said air duct and a cooling chamber below said blower and motor chamber, a motor-driven blower in said blower and motor chamber, the blower receiving air from said blower and motor chamber and forcing it down into said cooling chamber, and means in said cooling chamber for cooling the air passing through said cooling chamber and passing the air into said room.

2,450,114. REFRIGERATING APPARATUS FOR COLD STORAGE CABINETS. Milton Burney, Austin, Tex. Application July 27, 1945, Serial No. 607,325. 2 Claims. (Cl. 62-89.)



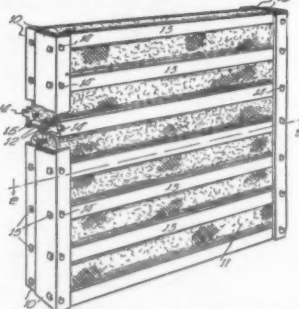
1. A cold storage cabinet comprising top, bottom, and side walls, an aperture in a portion of the top wall, a closure for closing the aperture, cooling coils lining the unapertured portion of the top wall and upper half of the side walls for conducting a refrigerant from a refrigerating space of higher to one of lower temperature, the bottom portion of the chamber of the cabinet providing an unoccupied space for items to be refrigerated.

2,450,184. AIR CONDITIONING GRILLE OR REGISTER ASSEMBLY. Harry E. Coleman, Mount Vernon, N. Y. Application May 18, 1945, Serial No. 594,559. 6 Claims. (Cl. 98-114.)



1. A prefabricated air outlet or air inlet assembly for air conditioning systems comprising, in combination, a duct elbow having a vertical portion adapted to be located between two studs of a building and in which it is to be installed and a horizontal portion adapted to extend through the finished wall which is to be carried by the studding and a grille-carrying wall ferrule plate connected to the room end of said horizontal duct portion, said assembly having rearwardly extending flanges overlapping the sides of said studs and adapted to be connected thereto, before the wall is applied, to support and to maintain said ferrule and said duct end in the desired ultimate relation to the finished wall and also having integral rearwardly offset top and bottom flanges arranged to be connected to the front faces of the two studs between which the duct is located.

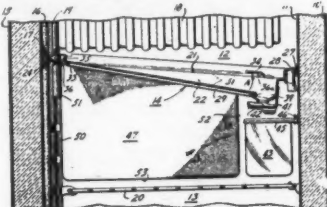
2,450,191. MAT FRAME FOR EVAPORATIVE COOLERS. Archie S. Feinberg, Dallas, Tex. Application Sept. 28, 1945, Serial No. 619,145. 3 Claims. (Cl. 261-97.)



1. In an evaporative cooler, a mat and mat frame, the latter comprising vertical end members and confronting pairs of side members vertically spaced and supported by said end members, members of said pairs each having a flat portion lying in a common horizontal plane and castellated whereby the confronting flat

portions of said pairs of side members will compressedly engage said mat at vertically and horizontally spaced points throughout its area.

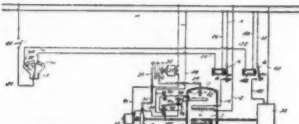
2,450,305. PARTITION FOR REFRIGERATORS. Malcolm G. Shoemaker, Doylestown, Pa., assignor to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application Feb. 5, 1948, Serial No. 6,477. 9 Claims. (Cl. 62-103.)



1. For refrigerators, a partition having two side-by-side sections, one section having a substantially imperforate portion and the other section having an open portion, a member mounted on the partition for movement relatively to each section and for adjustment into position to cover said open portion and in position to overlap said imperforate portion and to uncover said open portion, and sump means to one side of each of said portions to provide for the reception and drainage of defrost water.

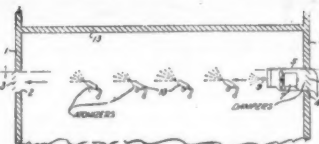
Week of October 5

2,450,478. AUTOMATIC ELECTRIC FLUID HEATING AND COOLING SYSTEM. Paul A. Johnson, Kansas City, Mo. Application June 12, 1944, Serial No. 539,965. 5 Claims. (Cl. 257-3.)



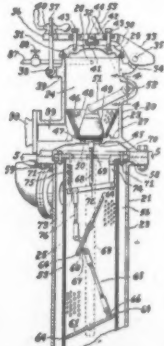
3. In an air temperature regulating system a fluid container; a heat exchanger including a coil and a motor driven fan and having supply and return connections with said container, an electric heater immersed in the fluid within said container; an electric refrigerator having a cooling unit immersed in the fluid within said container; an electrically driven pump in one of said connections between the heat exchanger and container, whereby fluid from said container is forced through said heat exchanger coil; and an electric circuit controlled by the differential of temperature in the room being regulated whereby the heating coil and the refrigerator are selectively operated to maintain the temperature of said room within certain predetermined limits.

2,450,571. DUCTLESS SYSTEM. Agnew H. Bahnsen, Jr., Winston-Salem, N. C. Application April 21, 1945, Serial No. 589,519. 2 Claims. (Cl. 98-30.)



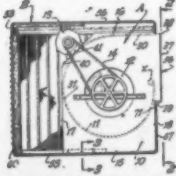
1. A system for ventilating and humidifying the atmosphere in a closed space, said space having opposed vertical walls, means in one of said walls immediately above the working zone in said space for introducing a current of air in a horizontal direction toward the opposite wall, means in the opposite wall at the same level for discharging air from said space and means at said level intermediate said walls for atomizing water into said space.

2,450,645. METHOD OF FREEZING FOOD. Frank B. Doyle, Phillipsburg, N. J., assignor to Ingersoll-Rand Co., New York, N. Y., a corporation of New Jersey. Original application Oct. 28, 1943, Serial No. 507,993. Divided and this application Nov. 15, 1944, Serial No. 563,595. 3 Claims. (Cl. 99-192.)



1. The method of processing food in two zones which comprises subjecting the food to a blanching medium in one zone, utilizing such blanching medium for expelling air from said one zone, next subjecting the food in said one zone to a vacuum, maintaining a vacuum in the other zone, interconnecting the zones, transferring the food to said other zone, cutting-off communication between the zones, and continuing subjecting the food to a vacuum for freezing the food.

2,450,647. BLOWER. Bryant Essick, Los Angeles, Calif. Application Jan. 16, 1945, Serial No. 572,997. 10 Claims. (Cl. 230-117.)



7. A blower including spaced substantially rectangular side plates, a curved body, having ends, joined between the side plates and forming a rotor chamber with an outlet opening between said ends, a rotor in the chamber, and a motor for driving the rotor mounted at the exterior of the chamber.

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SELECTED GROUP of men, graduates of well-known trade school, desire employment in refrigeration field. Will travel anywhere. Qualified in domestic and commercial refrigeration. Reliable. Placement Dept., EASTERN TECHNICAL SCHOOL, 888 Purchase Street, New Bedford, Mass.

MANUFACTURERS' REPRESENTATIVE for Ohio, Indiana, Kentucky and Michigan open for products to sell to jobbers and manufacturers. Ten years selling experience in refrigeration and air conditioning. BOX 3045, Air Conditioning & Refrigeration News.

MANUFACTURERS' REPRESENTATIVE would like to hear from manufacturers desiring coverage of dealers and distributors of commercial refrigeration equipment and supplies. Pennsylvania, New Jersey, Delaware, Maryland and Virginia. Twenty years experience walk-in coolers, display cases, refrigerators, refrigeration and air conditioning equipment. BOX 3051, Air Conditioning & Refrigeration News.

JOURNEYMAN ELECTRICIAN, contracting experience, licensed since 1936. Also several years experience servicing domestic and commercial refrigeration equipment. Have worked on large air conditioning installations in Detroit area. Age 33, hard worker, no clock watcher; desire to locate in or around Houston, Texas. BOX 3058, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

SALESMAN WANTED for Orange County, California. Top commissions on nationally advertised lines of commercial refrigeration. If you have a successful sales background and want a permanent connection with a growing concern in a prosperous community contact TRENDS INCORPORATED, 1230 South Main, Santa Ana, California. Unusual opportunity for producer.

SALES ENGINEER; one of Carrier's leading distributors of air conditioning and refrigeration has this opening for one who can assume full responsibility of engineering, estimating, and sale of his own jobs. Applications to 100 tons capacity. Must be thoroughly experienced. We are well established and financed. Located in large middlewestern city. Write full details of experience, age, etc. Guaranteed salary and commission. Your reply will be in confidence. Interview at our expense. BOX 3007, Air Conditioning & Refrigeration News.

WANTED—SALES manager to do an aggressive job for established distributor of nationally known and accepted line of display cases, reach-ins, walk-ins, etc. Must be capable of rounding out existing sales personnel, training, store planning for minimum annual volume of \$500,000. Large midwestern city—excellent remuneration. BOX 3027, Air Conditioning & Refrigeration News.

MANUFACTURER'S REPRESENTATIVES—wanted by nationally known manufacturer of commercial electric water coolers for office, factory, etc. Men must have experience and call on distributors, dealers, water companies, and rental companies. Compensation, commission. State fully background, experience, lines currently handled, territory covered, and references. BOX 3047, Air Conditioning & Refrigeration News.

COMMERCIAL REFRIGERATION sales manager—distributor for 14 years handling leading national brand with complete line of commercial refrigeration and air conditioning equipment and having territory covering states of Arizona, New Mexico, and portion of Texas, has opening for sales manager. Prefer person having experience selling commercial refrigeration and air conditioning equipment and capable of developing aggressive dealer organization. Good opportunity and future with remuneration on the basis of salary plus percentage on sales. Traveling expenses paid and car furnished. Headquarters in El Paso, Texas. Write, giving full details as to qualifications, experience, age, etc. and enclose photo. BOX 3052, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

OVERSTOCKED ITEMS—less than manufacturers' costs, new in original crates or cartons including Universal Cooler and Tecumseh condensing units. White-Rodgers controls, Detroit Lubricator expansion valves and solenoid valves, Allen-Bradley relays, Betz and Krack unit coolers, many other items. Write for price list. AMANA SOCIETY, Refrigeration Division, Amama, Iowa.

ELECTRIC REFRIGERATORS. Immediate delivery—all standard makes—fully reconditioned & guaranteed. Wholesale only. From \$49 up. We buy & sell as-is refrigerators. APPLIANCE PROD. CORP., 59 Crosby St., NYC 12, N. Y.

RECORDING THERMOMETERS, Bristol, remote 7 day electric, \$69. Thermostats, Merco, minus 10° to plus 40°, \$15. Heat exchangers, Acme, 3 ton @ \$27; 2 ton @ \$20. Evaporative condensers, Mario E C 5, \$335. Tunnel blast freezer complete 1,800 basic rating, \$535. New 1 H.P. to 7 1/2 H.P. water cooled Universal and Copeland at less than distributor's cost. Used Westinghouse 60 ton condensing unit—bargain! 3'6" x 6'6" Jamison double baton automatic close doors with track heads for 7'2" track, 1 1/4" cork board insulation at \$95 each. All new in original factory crates. BIMEL COMPANY, 2600 Colerain Ave., Cincinnati 14, Ohio.

SEALED UNITS rebuilt and exchanged. Prompt service on Coldsport (sealed & semi-sealed), Chieftain, Gale, Tecumseh, Norge and many others. One year guarantee. Write for price list and shipping instructions. BRIGHTON, 3906 Joy Rd., Detroit 6, Michigan.

DETROIT VALVES—due to reduction of inventory at manufacturer's cost. 425-677 F15# \$3.50; 860-674 F15# \$5.25. GRAND RAPIDS CABINET CO., Grand Rapids, Mich.

CLOSE OUT—below factory cost. Brand new bottle-type, electric water coolers in original crates. 115 volts, 60 cycle, A.C. equipped with Universal and Tecumseh hermetically sealed units. Hammer-tone brown with porcelain finish top. Guaranteed perfect; \$89.50 each, F.O.B. Chicago. Brand new 1/2-ton window-model air conditioners in original crates—complete with installation kits; walnut finish. 115 volts, 60 cycle, A.C. Universal open-type condensing units; \$184.50 each, F.O.B. Chicago. Terms—C.O.D. Quantity limited. LERN SALES CO., 9 S. Francisco, Chicago, Ill.

QUIT BUSINESS—25 Sporlan valves newly redated, other assorted valves. Over 40 seals, large assortment fittings, over \$35 compressor valves. Eight cylinders with approximately 50 pounds "Freon" and 50 pounds sulphur. New eight tray La Crosse ice cube maker. Many miscellaneous items. All for \$400. List on request. CHARLES B. SMITH, 916 8th N.E., Mason City, Iowa.

SUBJECT TO prior sale: Hermetic Chieftain units—1/4 H. P., \$44.50; 1/2 H. P., \$48.50. Other well known hermetics: 1/4 H. P., fan cooled, \$52.50; 1/2 H. P., fan cooled, light duty, \$57.50; 1/4 H. P., fan cooled, heavy duty, \$59.50; 1/2 H. P., fan cooled, \$69.50. Open units, standard makes: 1/4 H. P., \$54.50; 1/2 H. P., \$64.50; 3/4 H. P., \$84.50. Above prices quoted on lots of six. All open units are 60 cycle, single phase. All above units new, carrying factory warranty. Write for unit list. Penn type 260 Apol low pressure control, \$4.25. Penn type 262 Apol high pressure control, \$4.25. Minneapolis-Honeywell dual pressure control, \$4.50. Detroit Lubricator low pressure control, \$4.25. G. E. blower fan motor with 10" fan, \$4.50. Superior heat exchanger, 13" over-all, 3/4" x 1/4", \$4.75. Mueller heat exchanger, 14 1/2" over-all, 3/4" x 1/4", \$5.00. Kramer Trenton panel blower complete, 1/2 ton, \$30.00. Superior master drier 1/4" flare x 1 1/4" x 5 1/2", 754. U. S. "Freon" gauge, 4 1/2" face, 30" vac., 150# or 300#, with corresponding temp. scale with red warning hand and mounting holes, \$4.50. Scientific Instrument Co. dial thermometer, 4 1/2" face, minus 40 to plus 120, 5 ft. tube, \$4.50. 1 set U. S. "Freon" gauge, 2 1/2" face, 100# compound and 300# pressure, temp. scale, recal. and mounting holes, \$3.50. Ranco type KW-412 cold control complete, \$4.00. American Injector oil separator, 1/2 ton, \$3.50. Cold plates: 1-30" x 55", 2-30" x 64", 3 to a set, \$35.00. 6-5 lb. cans Davison refrigeration silica gel, \$6.00. 1-5 lb. can Davison refrigeration silica gel, \$1.10. Crouse-Hinds vapor proof refrigerator light, with guard, \$2.50. WALTER W. STARR, 1207 George Street, Chicago 13, Illinois.

BEAUTIFULLY DESIGNED and equipped sea food, salad, & cocktail bars. Occupies less than six square feet of floor space. Wired for illumination. Sturdy stainless steel, chrome and glass. Equipment includes beautiful chrome and glass serving accessories for forty-eight. Hundreds sold for \$1040.00; few remaining, \$995.00. Orders accepted subject to prior sales, literature upon request. BOX 3058, Air Conditioning & Refrigeration News.

BUSINESS OPPORTUNITIES

MIAMI, FLORIDA—a leading refrigeration, air conditioning, television, and appliance sales and service establishment—in same Miami location ten years. Grossed \$150,000 and netted \$20,000 last year. Will sell for \$7,500 to cover truck, equipment, and improvements plus merchandise inventory at cost—about \$8,000. BOX 2992, Air Conditioning & Refrigeration News.

PARTNER WANTED—for established air conditioning and commercial refrigeration business in New York City. Have valuable dealerships. Sales ability and experience in line more essential than capital. Real opportunity for right party. BOX 3049, Air Conditioning & Refrigeration News.

WILL SELL sheet metal shop, well equipped to do work in light and heavy gauges, with air conditioning and warm air heating department, located in Georgia city of 100,000 population. Owner has other interests. Apply BOX 3057, Air Conditioning & Refrigeration News.

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Refrigeration Problems

and their Solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

Motor Trouble (1)

Before going into a discussion of motor trouble, it must be stated that in a large percentage of the cases what is classed as motor trouble is not motor trouble at all. The trouble shows up in the motor, but the real trouble, or rather the cause of the trouble, is low voltage.

If all motors were supplied electric current at full voltage at all times, if they were kept properly oiled, enough, but not too much, and kept clean and given normal ventilation, motor troubles would be few indeed.

LOW VOLTAGE USUALLY NOT FAULT OF POWER COMPANY

When low voltage is mentioned, there is some tendency to jump to the conclusion that the power company supplying the current is not keeping its voltage up. This may be true, and often is true, especially in rural or outlying districts; but low voltage, more often is not the power company's fault at all.

Low voltage may be caused right on the customer's premises, and may be the result of his overloading his electric circuits, or the circuits being too long. Especially in commercial establishments, he may have outgrown his wiring installation.

Perhaps his wiring was originally installed 25 or 30 years ago when he had no thought of having all the electric equipment that he now has. His lines were sized for lighting only, with perhaps a few electric fans.

Now he has electric refrigerators, electric signs, electric fans, electric dishwashers, electric roasters, electric grilles, radios, jukeboxes, and no telling what else. Also he is probably using much larger light bulbs than he used to, and is lighting his place brighter.

Maybe the proprietor built his place only four or five years ago. He did not know just how successful his business venture would be, so he put in only a moderate amount of electric equipment, and the wiring to take care of that much equipment.

USER HAS OUTGROWN HIS WIRING

Now his business has grown rapidly. He has added a number of new pieces of equipment but has not added any to his wiring installation except perhaps to hang on some new branch circuits for the added equipment. So now his main entrance wiring is trying to supply two or three times as much current through the same wires, as it was originally intended for.

Or possibly all or most of his new equipment has been put on only one or two of his circuits, perhaps the main entrance wiring may not be overloaded, or not much so; but these two circuits may each be carrying two or three times the current they originally did or were designed to carry. Moreover, the additional electric equipment may have been placed in a location at or near the ends of the circuits, making it that much worse.

When he originally put in the wiring, he probably had no appreciable voltage drop; on some circuits perhaps as much as one or two volts. On others which were longer and had more equipment and wiring on them, the voltage drop out at the end of the circuits, when all of the equipment and lights were on, may have been as much as two or three volts or about 2% of the 110 volts, which is not bad and usually not noticeable, except perhaps a flicker of the lights when a motor went on.

EFFECT OF INCREASED LOAD ON VOLTAGE DROP

On one of these two circuits that were already loaded to about all they should carry, he puts on some more equipment that just doubles the load, that is, doubles the amount of current.

Does the voltage drop double also, from 2 or 3 volts to 4 or 6 volts? Not at all! Voltage drop goes up as the square of the current, so instead

of the voltage drop doubling, it becomes four times as much. The voltage drop then becomes 8 to 12 volts instead of 2 or 3 volts, or a voltage drop of about 10%. That is, instead of the voltage being 110 volts, it is about 100 volts. But that is not the worst of it!

EFFECT OF MOTOR STARTING ON VOLTAGE DROP

Motors are designed to start and carry full load if the voltage to their terminals is as much as 90% of voltage stamped on the nameplate of the motor; that is if the under-voltage is not more than 10%. So it would seem that the motors would still be able to get up to speed and carry their full loads, even though the line voltage is only about 100 volts, representing an under-voltage of 10%. Admittedly it would be just on the borderline, but it sounds as if it would "get by."

But it wouldn't at all get by. Motors require up to 5 or 6 times as much current while they are starting and getting up to speed, as they do when they are running normally at full speed. So while the motor is starting, it is as if as many as 5 or 6 motors were running on the line, instead of just that one.

Thus, instead of the added equipment just doubling the line current, as it does when the motors are running normally, this added equipment may very easily cause the line current to be four, five, or six times as much while the one motor is starting and coming up to speed. Then the voltage drop may be as much as 15 or 20 times while the motor is starting.

That is, instead of the former voltage drop of 2 or 3 volts, it may now be as much as 30 or 40 volts while the motor is starting. This means that the line voltage on this overloaded line, while the motor is trying to start, is down to as low as 70 or 80 volts. And just try to get the motor up to speed at that low a voltage.

AN ELECTRIC MOTOR LIKE A WILLING HORSE

But that is just what the motor does. It tries to start on such low voltage, and if not properly protected, it may be ruined. An electric motor is like a willing horse; it will destroy or harm itself trying to pull a load that is far too heavy for it.

If all the lights, motors, and other electric appliances on the circuit are turned off, and a voltmeter connected across the line anywhere on the circuit, even out at the end, the voltmeter will show full voltage.

Then as the lights and motors are turned on, one by one, the voltage starts dropping. When a motor goes on the line, the voltage drops considerably while the motor is getting up to speed. By the time it has got up to full speed, the voltage has recovered somewhat, but not back to its former value.

LOAD RESPONSIBLE FOR VOLTAGE DROP

So it is load on the circuit, measured in amperes of current, that affects the voltage drop. Double the load, the voltage drop is four times as much. Cut the load in half, the voltage drop becomes one fourth what it was.

Motor trouble caused by excessive voltage drop (should never be more than 10%, or 11 volts on an 110-volt circuit or 22 volts on a 220-volt circuit—and this assumes that the frequency does not change) is often mistaken for overload. An 110-volt motor acts very much the same on 80 or 85 volts as if the compressor is tight and thus putting an overload on the motor.

A VOLTAGE TESTER NECESSARY

Your tool kit should have a voltage tester in it, preferably a good voltmeter reading up to at least 250 volts; or better, a double scale type one scale of which goes up to 500 volts. They are rather expensive and you must be careful with them and not bang them around. Also they

should be recalibrated occasionally. But they will pay for themselves in time saved, trying to figure out why the motor will not pull the load, why it is running hot, or why the overload protector is kicking out.

As an alternative you should at least have one of the vacuum tube type of test lamps, that is so designed that you can recognize excessive under-voltage by the dullness of the light.

If the voltage is excessively low, the motor acts "weak." It "just won't pull the hat off of your head." Its weakness is especially noticeable at starting. Also watch the lights; if they seem dim, you can bet on under-voltage.

Another test for low voltage is to throttle the suction service valve of the compressor enough to get the suction pressure in the compressor down to around zero gauge or lower. If the motor then picks up and gets up to full speed, it is a good indication of low voltage.

Take off the belts and try the compressor pulley by hand to see if it seems mechanically tight, but don't be deceived by a "tight spot," it may be due to a piston coming up to top center on the compression stroke.

SUSPECT VOLTAGE DROP FIRST

If a motor does not seem to be able to get up to speed, or groans along, seemingly running at less than its normal speed, *always suspect low voltage*. You will be more often right than wrong.

When testing the voltage:

(1) Test while the motor is running, either at full speed or trying to get up speed. It doesn't mean a thing what the voltage is with the motor not running.

(2) Test at the motor terminals, not at the meter, the fuse box, or even at the wall receptacle where the cord to the motor is plugged in. Take off the motor terminal box and remove enough tape so that you can get at the bare leads. What the voltage is elsewhere doesn't mean a thing either.

(3) After you have determined that the voltage is low at the motor terminals and while the motor is running, then start checking back, to find where the voltage drop is.

If it is low at the motor terminals and normal at the receptacle, the cord is too long and of too small wire (most "extension cord" is No. 18, which is too small for anything but a light or a small fan motor).

If the voltage is low at the motor terminals and normal at the fuse box, then the branch circuit is overloaded and your motor must be switched to another branch circuit that is lightly loaded, or a new, separate circuit must be run to the motor.

If the voltage at the fuse box is low also, then check the voltage at the "entrance" where the meter and the main switch are. If the voltage is normal there, the main lines from the entrance to the fuse box are overloaded and must be replaced

with larger lines, or supplemented by additional means.

If the voltage at the entrance is low, then notify the power company, for it is their responsibility to deliver rated voltage to the customer's entrance. But before you call them, be sure that you know that the voltage is low at the entrance not in the customer's inside wiring. It usually is in the customer's wiring, and that is his responsibility to correct, not the power company's.

(To Be Continued)

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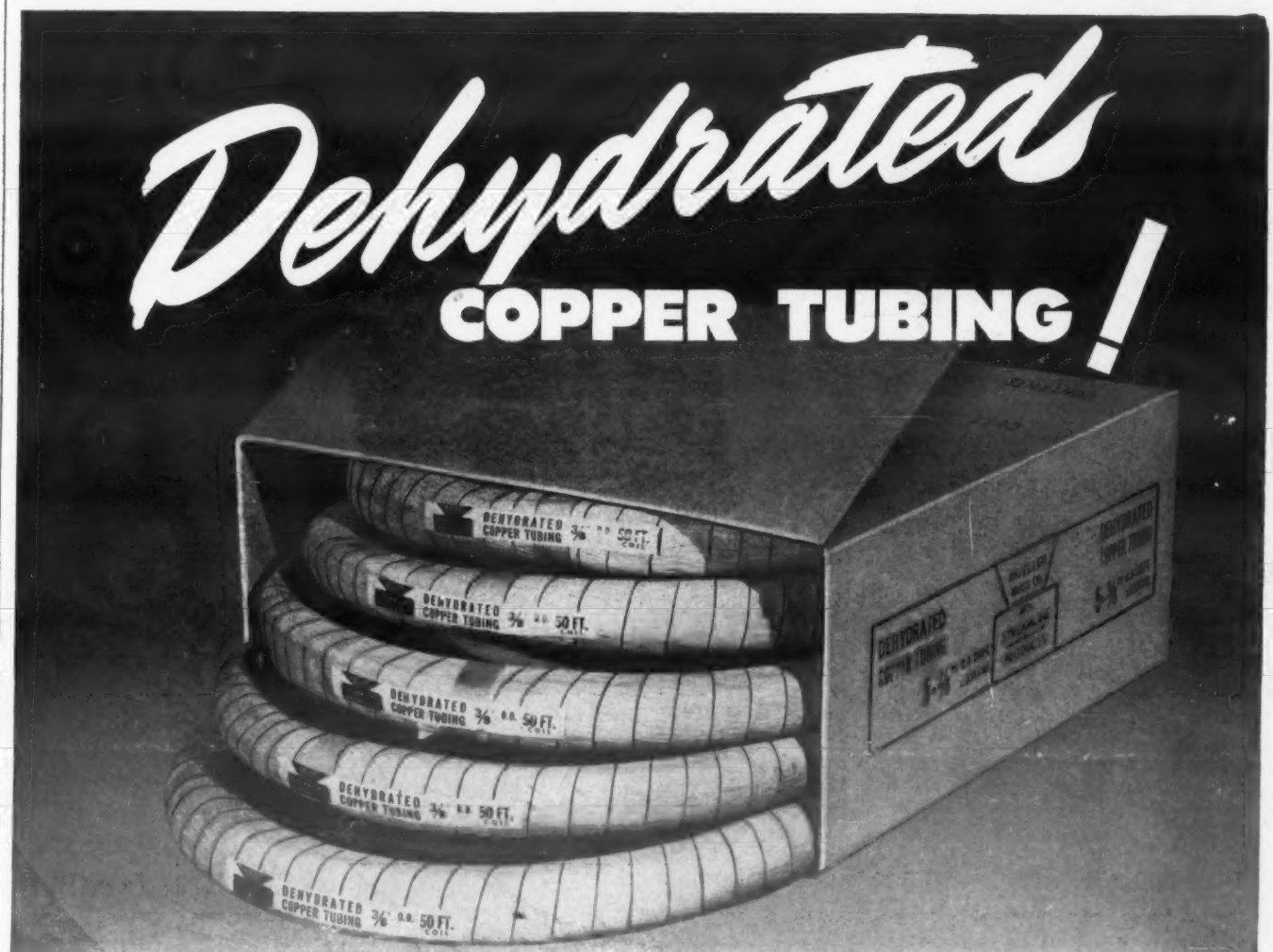
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What Remington Will Push In 1949



A new Remington air conditioner gets a thorough inspection from Remington's (l. to r.) Moise Johnson, southeastern district mgr.; Herbert L. Laube, president; Jack White, service mgr.; Mark Watkins, vice president; Howard Peters, assistant sales mgr.; William H. Moler, southwestern district mgr.

Universal Cooler--

(Concluded from Page 1, Column 2) versal Cooler's only objective is to build a continuing stronger organization and to provide more facilities and products for the benefit of the many users of our equipment.

In announcing the expansion program, Robertson explained that immediately after World War II Universal Cooler had entered into a contract with the Hupp Mfg. Co. of Detroit for the latter to machine compressor parts and Universal to assemble them.

Under the new plan, machine tools are being set up in the Marion factory so that all machining operations as well as assembly operations can be performed under one roof, thereby reducing manufacturing costs, he said, adding that the company expects to be in production on these units in March, 1949.

Ehret Opens In Tonawanda N. Y.

TONAWANDA, N. Y.—R. A. Ehret has opened a new appliance store at 4271 Delaware Ave., here.

Cross-Fla DRIER-FILTERS
NOW AVAILABLE with either
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The exclusive new "Cross-Fla" principle that guarantees NO clogging and NO Pressure Drop—now more universally applicable—available with DUCAL DRIERITE, for hot liquid line installations, or with SILCA GEL, for low-side, suction line or other cold locations.

Instructive informative Bulletin available on request.
REMCO INCORPORATED
ZELIENOPLE, PA.

Remington Shows New Room Air Cooler Line; Opens 2 District Offices

CORTLAND, N. Y.—First showing of the new and expanded line of Remington all-year room air conditioners was staged for the sales staff of the manufacturer, Remington Air Conditioning Div. of Remington Corp., during a recent three-day sales meeting at the home offices here.

At the same meeting, Herbert Livingston Laube, president of Remington, announced the opening of two new district offices. A southeastern district office, headed by Moise Johnson, is now located at 2100 Arch St., Philadelphia, and a southwestern district office at 2523 McKinney Ave., Dallas, Tex., under the management of William H. Moler.

In his remarks to the sales organization, Laube expressed a high degree of optimism over the future of the room air conditioning business.

"1948 saw the largest production in history of room units," Laube said, "with an industry total of approximately 70,000, and I predict that in 1949 this total will for the first time pass the 100,000 mark."

"Our own initial season in the domestic market has been successful far beyond our hopes, and with the whole industry now coming into its own, I think we can conservatively look forward to a 100% increase in sales for 1949."

Albright's Location Set

UTICA, N. Y.—Albright's Appliance Service, formerly Schwenders Parts and Service, will be located at 612 Charlotte St. on Jan. 15.

3 Models Offered--

(Concluded from Page 1, Column 4) 31 1/4 in. wide, 26 3/8 in. deep, and 58 in. high.

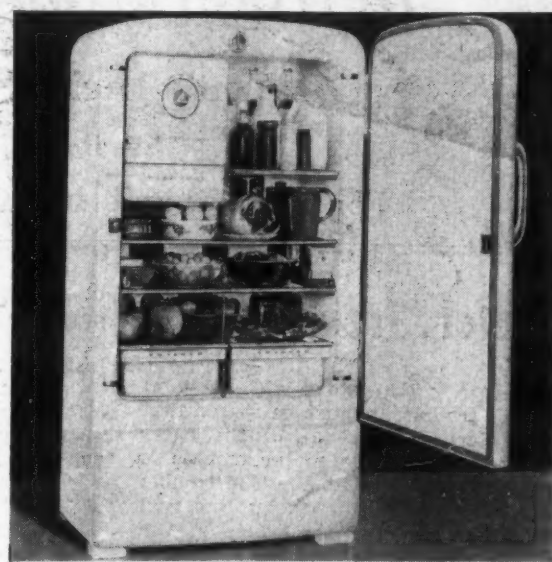
Suggested retail prices for 1949 Leonard refrigerators are as follows: LR (apartment-house size), \$219.95; SL (8.6 cu. ft.), \$249.95; DL (8.6 cu. ft.), \$279.95; LC (full-length-door), \$319.95; LF (full-length-door), \$349.95; LH (full-length-door Hi-Humid), \$399.95; LT (two-door combination), \$459.95.

Model SL includes a side-mounted frozen food chest for 25 pounds of packaged frozen foods and ice cubes, an aluminum meat tray and a sliding 12-qt. vegetable crisper. Model DL has a side-mounted frozen food chest with a capacity of 30 pounds, a plastic meat chest and cover, twin 12-qt. sliding vegetable crispers with independently supported glass covers, and a removable half-shelf for convenience in adjusting storage space.

The LT two-door model provides refrigerated storage-space from top to base, with a capacity of 9.5 cu. ft. within the shelf area, plus an extra 1.5 cu. ft. in a special refrigerated fruit freshener zone. A full-width freezer chest, equipped with its own separate door to avoid admitting warm air when the refrigerator compartment door is open, holds 80 pounds of packaged frozen foods and ice cubes.

In addition to its separate freezer chest, the LT combination model features a roomy balanced-cold compartment for general food-storage, a refrigerated tilt-out fruit freshener, and a glass-enclosed "Hi-Humid" freshener for maintaining the freshness of high-moisture-content foods.

Latest Leonard Deluxe



Latest Leonard refrigerator is this 1949 deluxe 8.6-cu. ft. model. It contains a side-mounted frozen food chest, a plastic meat chest and cover, two vegetable crispers, and a removable half-shelf to accommodate odd-sized food items.

Both the freezer compartment and the general food storage compartment have their own independent set of refrigerating coils.

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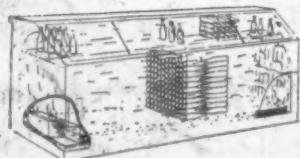
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